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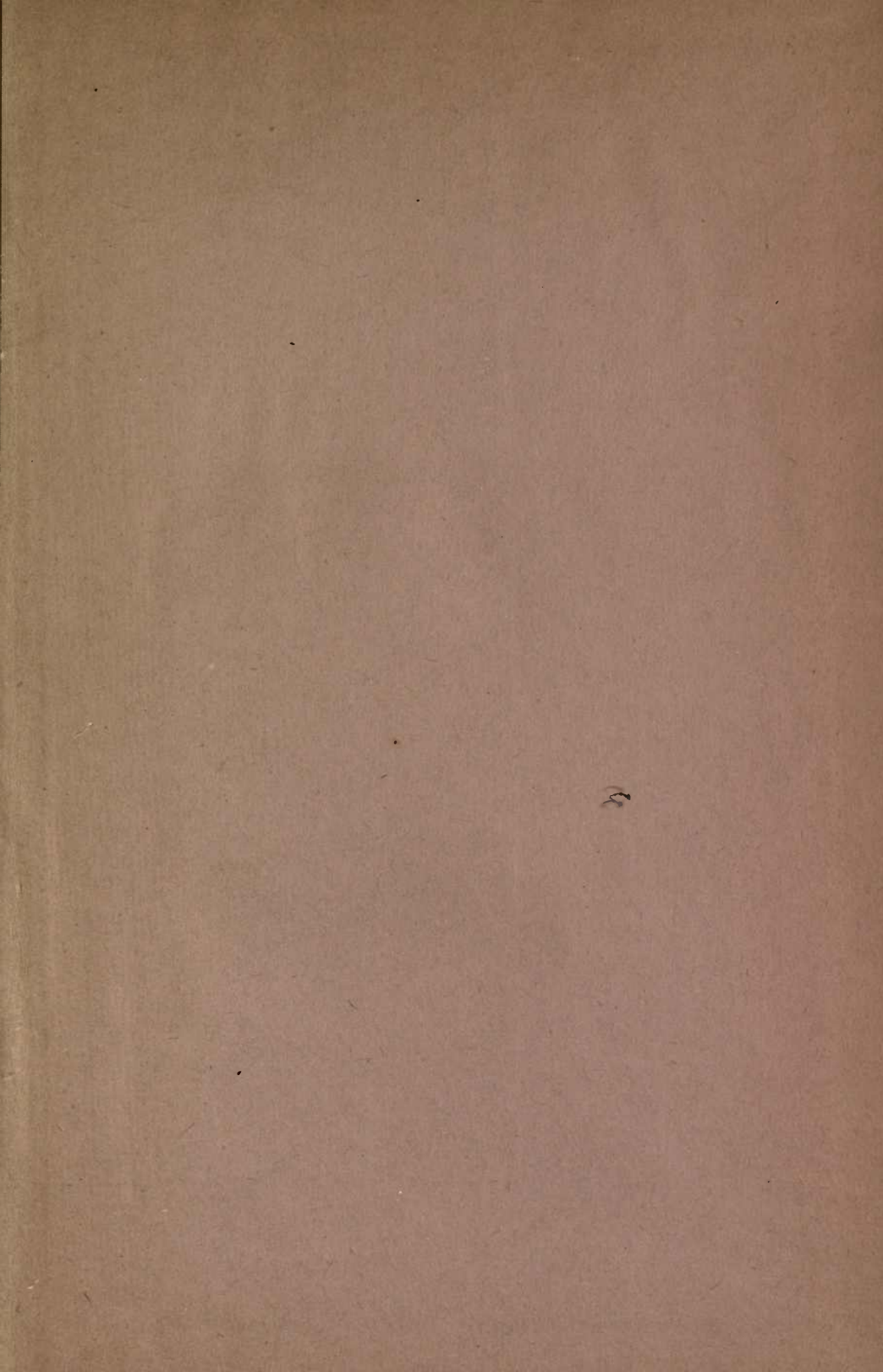
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GEOLOGICAL SURVEY OF ALABAMA

EUGENE ALLEN SMITH, STATE GEOLOGIST

BULLETIN No. 7.

A PRELIMINARY REPORT

ON A PART OF THE

Water Powers of Alabama

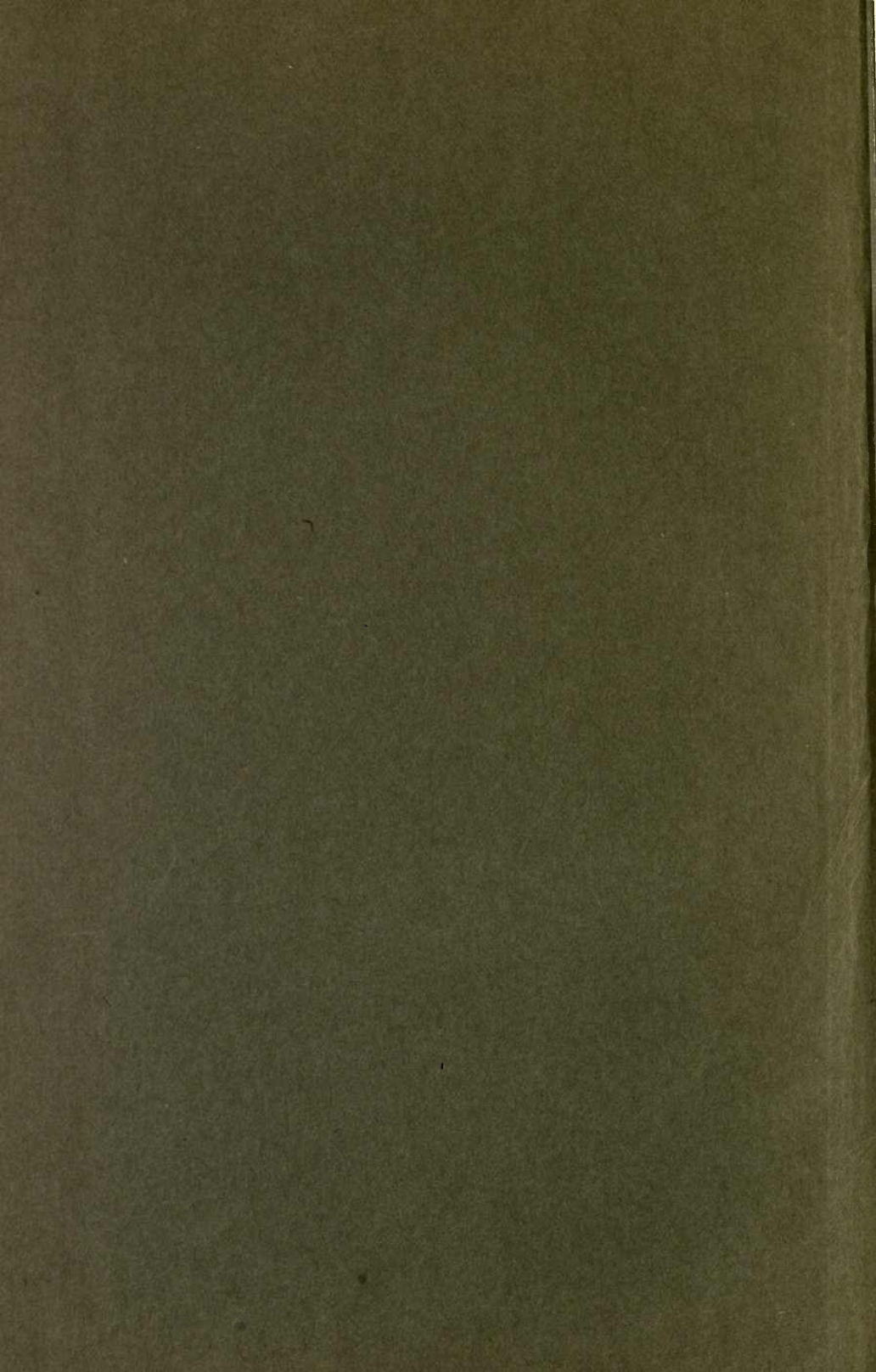
BY

B. M. HALL,

CONSULTING ENGINEER, U. S. GEOL. SURVEY,
FOR GEORGIA, FLORIDA, TENNESSEE AND MISSISSIPPI.

1903





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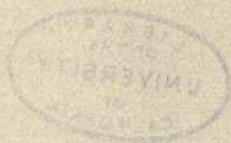
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To His Excellency, William D. Jelks, Governor of Alabama:

Dear Sir: I have the honor to transmit herewith a preliminary report on the Water Powers of Alabama, by B. M. Hall, of the United States Geological Survey, Consulting Engineer, Hydrographic Division, for Alabama, Florida, Georgia, Tennessee, and Mississippi.

Our Alabama Geological Survey, in coöperation with the United States Geological Survey, has for a number of years been engaged in a systematic investigation of the Water Resources of the State. In this investigation we have naturally been less interested in that portion of the rainfall which passes back into the atmosphere by evaporation, than in those portions which, temporarily at least, become more or less incorporated with the materials forming our land surface, and which on that account may be considered as forming a part of our territory. And our investigation of this earth water, (to use a term to distinguish it from the atmospheric water), may appropriately be followed along two lines: It may be concerned, 1, with that part of the water which, collecting in rivulets, creeks and rivers, flows on towards the sea by open channels, *i. e.*, the "run-off"; or 2, it may take into account that part which soaks into the ground, and reaches the water courses or the sea only after an underground passage of greater or less duration, *i. e.*, the ground water or the "in-soak," if we may be allowed the use of such a word.

While the proportion of the rainfall which appears in the run-off of the streams varies between very wide limits, depending on the geological formations, the locality, etc., in Alabama on an average, about fifty per cent. of the rainfall is lost by evaporation and the remainder forms the run-off of the streams, and, curiously enough, only a small percentage of this run-off is supplied by the surface water alone, for most of it reaches the water courses by underground seepage.

In the course of this underground circulation the water may reach the surface from springs, from ordinary shallow and deep wells, and from artesian wells, and may be utilized for domestic and municipal water supply, and rarely, in Alabama at least, for irrigation and for power.

The present writer has had charge of this branch of the investigation, and his report on the Artesian and other underground Water Systems of the State is now in manuscript, and practically ready for the printers.

Most of the material for this report has been collected by the Alabama Geological Survey.

The run-off, on the other hand, is utilized for transportation, for domestic and municipal water supply, and for power, and this branch of the subject has been in charge of Mr. Hall, who has for some years been employed by the United States Geological Survey in collecting records of the gage heights, and in making surveys and discharge measurements of the principal streams of Alabama (and adjacent States), from which the values of these streams for the various purposes above enumerated may be closely estimated. In the collection of these data, the Alabama Geological Survey has contributed to the extent of paying the observers of the gage heights at seven stations along Alabama streams, but with this exception and apart from the map, the present Report has been prepared without cost to the State of Alabama. We are also indebted to the United States Geological Survey for most of the illustrations which appear in the body of the Report, and these cuts, as well as most of the data from which this Report has been compiled by Mr. Hall, have been published in the Annual Reports of the Director of the National Geological Survey.

While the present report deals with only one of the many uses to which the run-off of our streams may be put, viz., for the production of power, this is in many respects, especially in Alabama, the most important of these uses, for the great increase in the applications of electricity has of late turned attention to the utilization for its production, of water powers which have heretofore been allowed to run to waste, and there can be little doubt but that in a comparatively short time, all the available water power of the State will be turned to account.

Very respectfully,

EUGENE A. SMITH,
State Geologist.

University of Alabama,
Dec. 1, 1902.



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GEOLOGICAL SURVEY OF ALABAMA
EUGENE ALLEN SMITH, STATE GEOLOGIST

HYDROGRAPHIC MAP

OF ALABAMA SHOWING

GAGING STATIONS, FALL LINES,
AND SOME OF THE
LARGER WATER POWERS

Compiled by
B. M. HALL, C. & M. E.,
Consulting Engineer

From Co-operative Surveys and River
Measurements made under his Direction as
Hydrographer for U. S. Geological Survey
and ALABAMA Geological Survey
1895 to 1902.

LEGEND

-  Hydrographic Gage Stations
-  Large Utilized Water Powers
-  Large Undeveloped Water Powers
-  Fall Line between Crystalline and Cretaceous
-  Fall Line between Crystalline and Paleozoic



Note: The Powers on smaller
Streams are not shown.



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TABLE OF CONTENTS.

Letter of Transmittal	3
Preface	5
CHAPTER I.	
Drainage Basins	6
Streams and Water Powers.....	9
Explanation of Station Records and Tabular Statements de- duced therefrom	11
Gage Heights	11
Discharge Measurements	12
Rating Tables	12
Estimated Monthly Discharge	13
CHAPTER II.	
Tallapoosa River and Tributaries.....	15
1. Tallapoosa River at Milstead	15
2. Tallapoosa River near Susanna	28
3. Tallapoosa River near Sturdevant.....	30
4. Survey of the Tallapoosa River in Alabama.....	32
5. Big Sandy Creek near Dadeville	39
6. Hillabee Creek near Alexander City	46
7. Alabama Tributaries of the Tallapoosa River from Milstead up	51
CHAPTER III.	
Coosa River and Tributaries	53
1. Riverside Station on Coosa River.....	53
2. Coosa River at Rome, Georgia.....	69
3. Talladega Creek at Nottingham.....	82
4. Alabama River at Selma	85
5. Miscellaneous Discharge Measurements	91
6. Tributaries of the Coosa River from Wetumpka up....	92
7. Water Powers on Tributaries of Coosa River.....	92
8. Coosa River Survey	93
9. Table of Discharge and Net Horse Power at thirty-one Locks and Proposed Locks on the Coosa River, at Lowest Water of 1897 and 1900.....	95
CHAPTER IV.	
Cahaba River:	
1. Cahaba River at Centerville	99
2. Survey of the Cahaba River	101
CHAPTER V.	
Black Warrior River and Tributaries	104
1. Tuscaloosa Station on Black Warrior River.....	104
2. Black Warrior River at Cordova	120
3. Survey of the Black Warrior River	124
4. Appendix to Black Warrior Report	127
5. Black Warrior River Tributaries.....	128
CHAPTER VI.	
Tombigbee River:	
1. Tombigbee River at Columbus, Miss.....	128
2. Tombigbee River near Epes	133
3. Tributaries of the Tombigbee	138
CHAPTER VII.	
Tennessee River and Tributaries:	
1. Tennessee River and Tributaries:	
2. Shoals in Tennessee River near Florence	161
3. Tributaries of Tennessee River	164
CHAPTER VIII.	
List of Utilized Water Powers, arranged by Counties.....	165

LIST OF ILLUSTRATIONS.

Hydrographic Map of Alabama	Frontispiece
Plate A—Bridge at Milstead, to face page	15
Plate B—Rapids at Tallassee, to face page	32
Plate C—Montgomery Power Company's Dam and Power House, near Tallassee, to face page.....	33
Plate D—Dam at Prattville, to face page	165
Fig. 1—Graphic representation of discharge of Tallapoosa River at Milstead for 1897.....	25
Fig. 2—Graphic representation of discharge of Tallapoosa River at Milstead for 1898	26
Fig. 3—Graphic representation of discharge of Tallapoosa River at Milstead for 1899	26
Fig. 4—Map of Tallapoosa River from top of Griffin Shoals, to Milstead	37
Figs. 5 and 6—Profile of Tallapoosa River from top of Griffin Shoals to Milstead	38
Fig. 8—Profile of Big Sandy Creek, Tallapoosa County.....	44
Fig. 8—Rating Curve for Riverside Station	56
Fig. 9—Discharge of Coosa River at Riverside Station, 1897..	67
Fig. 10—Discharge of Coosa River at Riverside Station, 1898..	67
Fig. 11—Discharge of Coosa River at Riverside Station, 1899..	68
Fig. 12—Discharge of Coosa River at Rome, Ga., 1897-1898....	80
Fig. 13—Discharge of Coosa River at Rome, Ga., 1899.....	81
Fig. 14—Discharge of Black Warrior River at Tuscaloosa, Ala., 1889-1898	118
Fig. 15—Discharge of Black Warrior River at Tuscaloosa, Ala., 1899	119
Fig. 16—Discharge Tennessee River at Chattanooga, 1891-1898	160
Fig. 17—Map showing shoals in Tennessee River near Florence	162



PREFACE.

Very recently two large Water Powers have been developed on the Tallapoosa River, one of which is at Tallassee, Ala., and the other is three miles above Tallassee. These developments have awakened considerable interest in the undeveloped powers of the State, and this Bulletin undertakes to answer in a general way the numerous inquiries concerning them. Some of the largest of these unpublished powers are:

Power Site No. 3, on Tallapoosa River, at Double Bridges, about ten miles above Tallassee, where a head of 40 feet can be obtained. And other similar powers farther up the river.

Black and Sanford Shoal on Big Sandy Creek, near Dadeville, with 80 feet of fall.

Thirty-one locks on the Coosa River, capable of furnishing 1,300 to 4,500 horse power each, or an aggregate of 100,000 horse power during low season of an ordinary year like 1900.

Seven power sites on the Cahaba River capable of furnishing from 500 to 1,100 horse power each.

Squaw Shoals on the Black Warrior, with 43 feet of fall.

Also the following shoals on the Tennessee River:

Shoal:	Fall in feet.	Minimum H. P. dryest years.	Minimum H. P. average years.
Elk River Shoal	26	15,600	30,550
Big Muscle Shoal	85	51,000	99,875
Little Muscle Shoal	23	13,800	27,025
Colbert Shoal	21	12,600	24,675

These and other powers will be described more fully in Chapters II to VIII.

The water powers of Alabama are conveniently located for running cotton factories and other manufacturing plants, and also for generating electricity that can be transmitted to cities for power, light, etc. The larger powers are all close to water transportation, and are also on important railroads. These advantages will naturally make them more valuable than if they were otherwise located.

B. M. HALL,

Nov. 1, 1902.

CHAPTER I.

DRAINAGE BASINS, STREAMS, AND WATER POWERS.

DRAINAGE BASINS.

The five principal drainage basins of the State are:

First—The Apalachicola Basin, draining to the Chattahoochee and Apalachicola River, and entering the Gulf at Apalachicola, Fla.

Second—The Choctawhatchee Basin, draining to the Gulf through Choctawhatchee Bay.

Third—The Pensacola Basin, draining to Pensacola Bay and Perdido Bay, near Pensacola, Fla.

Fourth—The Mobile Basin, including the waters of Tallapoosa, Coosa, Cahaba, Alabama, Warrior, and Tombigbee Rivers, and draining into the Gulf at Mobile, Ala.

Fifth—The Tennessee Basin, draining into the Tennessee River, and thence through the Mississippi to the Gulf at New Orleans.

The water powers of the State are mainly in the Mobile and Tennessee Basins, which practically cover the entire State, except a small area in the southeast corner.

The area of crystalline rocks in Alabama is a triangle on the east side of the State, including Cleburne, Randolph, Chambers, Lee, Tallapoosa, Clay, Coosa, and parts of Elmore, Chilton, and Talladega counties. The "fall line," or escarpment dividing the Crystalline region from the Cretaceous formation of the Coastal plain on the southwest, runs from Columbus, Ga., crossing the Tallapoosa River at Tallassee, and the Coosa at Wetumpka. The northwestern boundary of the area of the Crystalline rocks which divides it from the Paleozoic formations, recrosses the Coosa River near Marble Valley postoffice, in Coosa county, and runs in a northeasterly direction towards Cedar-town, Ga., crossing the Alabama line near Warner.

The line between the Paleozoic region and the Cretaceous formation runs from a point near Strasburgh, in Chilton county,

in a northwesterly direction to Tuscaloosa, thence in a northerly direction to a point near Tuscumbia, and thence northwesterly to the Mississippi line.

The southwestern boundary of the Cretaceous passes from Fort Gaines, approximately, through Clayton, Troy, Snow Hill, and Livingston, in a northwesterly direction.

It may be said in a general way that the streams have their greatest falls in passing from an older to a younger geological formation. Tallassee Falls, on the Tallapoosa, and Wetumpka Falls, on the Coosa, are made in passing from the Crystalline to the Cretaceous. Those on Talladega Creek and other small streams in entering the Coosa Valley from the southeast in Talladega, Calhoun, and Cleburne counties, are from the Crystalline to the Paleozoic. The shoals above Centerville, on the Cahaba, above Tuscaloosa, on the Black Warrior, and near Tuscumbia, on the Tennessee River, are made in passing from the Paleozoic to the Cretaceous. As the Coosa River runs off of the Paleozoic on to the Crystalline near Talladega Springs, the shoals above this point reverse the general order by being made in passing from a younger to an older formation.

STREAMS AND WATER POWERS.

The following is a statement, according to water--shed, of the important streams and such data concerning them as can be compiled from the work of the Alabama Geological Survey, the United States Weather Bureau, and the United States Engineering Corps, combined with the hydrographic investigations of the United States Geological Survey under the direction of the compiler of this report. Aside from certain surveys made to obtain maps and profiles of Tallapoosa River and Big Sandy Creek, the work done by the Hydrographic Division of the United States Geological Survey in this State deals exclusively with the amount of water flowing in the streams, and is intended to give a safe basis for calculation of low water volumes at all seasons of the year, and for several consecutive years, in order to arrive at their value for water power, irrigation, municipal supply, mining, navigation, etc. In order to do this certain convenient stations have been established on important rivers. At each of these stations a gage rod is set to show the fluctuations of the streams; and a gage reader is employed to observe the height of the water every morning at the same hour,

and to make a weekly report of the same to the Hydrographer-in-charge. As far as possible the river stations of the United States Weather Bureau and the United States Engineer Corps have been utilized for this purpose. From time to time the Hydrographer or one of his field assistants, visits the station and makes an accurate meter discharge measurement of the stream, noting the height of the water on the gage at the time the discharge measurement is made. After a number of such discharge measurements have been made at different gage-heights, a rating table is made from the data thus obtained, which gives the amount of water flowing in the stream, at that station, for any gage-height shown on the rod. Thus, by inspection of the table of daily gage-heights, the flow of the stream is shown for every day in the year, or years, covered by the observation of gage-height. At seasons of uniform low water, when the daily fluctuations of the rod are very slight for weeks at a time, discharge measurements are made of the stream at many points above and below the gage station in order to establish a relation between the discharge at these points and at the station. In like manner the principal tributaries are measured for the same purpose, where it is practicable to do so. In this way it is possible to arrive at a close estimate of the flow of all the streams of the water-shed, and make a rating of the gage for each that will represent its flow under average conditions, not including the floods caused by local rains. Such tributaries as have not been measured can be estimated by water-shed comparison with similar tributaries that have been measured.

In the following statement the actual gage-heights and discharge measurements are given in order to show the data upon which the conclusions are based. The regular gage stations that have been utilized are:

<i>Station.</i>	<i>Stream.</i>	<i>Observer.</i>	<i>Paid by.</i>
1—Milstead, Ala.....	Tallapoosa River	Seth Johnson...	Ala. Geo. Sv.
2—Sturdevant, Ala....	Tallapoosa River	B. F. Neighbors.	Ala. Geo. Sv.
3—Dadeville, Ala.....	Big Sandy Creek	T. H. Finch.....	Ala. Geo. Sv.
4—Alexander City, Ala.	Hillabee Creek...	J. H. Chisolm...	Ala. Geo. Sv.
5—Nottingham, Ala....	Talladega Creek.	R. M. McClatchy.	Ala. Geo. Sv.
6—Riverside, Ala.....	Coosa River.....	J. W. Foster.....	Ala. Geo. Sv.
7—Cordova, Ala.....	Black Warrior	R. A. B. Logan.....	Ala. Geo. Sv.
8—Montgomery, Ala...	Alabama River...	U. S. W. B.....	U. S. W. B.
9—Selma, Ala.....	Alabama River...	U. S. W. B.....	U. S. W. B.
10—Tuscaloosa, Ala....	Black Warrior	R. W. S. Wyman, Jr.	U. S. Eng. C.
11—Eples, Ala.....	Tombigbee River	J. C. Horton.....	A. G. S. Ry.
12—Rome, Ga.....	Coosa River.....	W. M. Towers....	U. S. W. B.
13—Chattanooga, Tenn.	Tennessee River.	U. S. W. B.....	U. S. W. B.

As the investigations in this State have been confined so far mainly to the Mobile and Tennessee basins, only the streams of these basins will be considered in the following discussion. It is to be remembered that from West Point, Ga., southwards, the line of Alabama is on the west bank of the Chattahoochee River, along the line where ordinary vegetation ceases to grow. This leaves all of the water power of the main stream on Georgia territory. There are many creeks flowing into the river from Alabama, some of which have considerable fall, as they come from a high plateau. Holland Creek, opposite Columbus, Ga., furnishes the Columbus water supply by gravity, having a fall of 117 feet in less than four miles. No doubt many of the others have as much fall, but as they have not been examined, a report on them cannot be made at present, but a recent reconnoissance along the Chattahoochee gives the following estimate of power obtained from some of them, 12 hours per day for each foot of fall, if the water is stored during the 12 idle hours:

Big Uchee Creek, Russell County.....	7 H. P. per foot of fall.
Ihagee Creek, Russell County.....	2 H. P. per foot of fall.
Hatchechubbee Creek, Russell County...	7 H. P. per foot of fall.
Cowikee Creek, Barbour County.....	11 H. P. per foot of fall.
Yattayabba Creek, Henry County.....	9 H. P. per foot of fall.
Omussee Creek, Henry county.....	7 H. P. per foot of fall.

EXPLANATION OF STATION RECORDS AND TABULAR STATEMENTS DEDUCED THEREFROM.

GAGE HEIGHTS.

The "Table of Gage Heights" is a record of the height of water on a gage rod, graded to feet and hundredths of a foot, set into the river vertically, and fastened permanently to a convenient tree or pier. The rod is read every day in the year, at the same time of day, which is about 8 o'clock in the morning. Inches are not used in these records, as the daily height of water on the gage is written in feet and decimals of a foot.

DISCHARGE MEASUREMENTS.

These records show the date, the gage height at time of measurement, and the amount of water in cubic feet per second, or "second-feet," that is found by the measurement to be flowing in the river. (Second-feet means the same as cubic feet per second.) If we imagine a small stream filling a rectangular flume 1 foot wide and 1 foot deep, we have a stream whose sectional area is 1 square foot. The volume of this stream will vary in proportion to the speed with which the water flows through the flume. If the water is moving at a velocity of 1 foot per second, the flow or volume of water is 1 cubic foot per second, and would fill a vessel 5 feet wide, 5 feet long, and 4 feet deep in just 100 seconds, as such a vessel would hold 100 cubic feet of water. If the water in the flume 1 foot wide and 1 foot deep flows with a velocity of 2 feet per second, the volume will be 2 cubic feet per second, or 2 second-feet, and so on for any other velocity. In the same way if the flume is 20 feet wide, and 5 feet deep, its sectional area will be 100 square feet, and if the average velocity is 3 feet per second, the volume will be 300 cubic feet per second, or 300 second-feet. In each of the discharge measurements here enumerated, a cross-section of the stream is measured, and velocities taken with an electric current-meter at many points of the cross-section. Instead of multiplying the entire cross-section by an average velocity, the area was divided up into a large number of small sections by soundings from 5 to 10 feet apart, and the area of each of the small sections multiplied by the velocity at the small section, thus giving the second-feet flowing in each small section. The sum of the discharges of all the small sections makes the total discharge of the stream.

RATING TABLE.

This is a table showing the discharges in second-feet (cubic feet per second) for all stages of water on the gage. Hence when the gage heights are known, the corresponding discharges can be taken from the rating table and written opposite each daily gage height, thus giving the flow in cubic feet per second on each day in the entire year.

ESTIMATED MONTHLY DISCHARGE, ETC.

This table gives in the first three columns, the maximum, minimum, and mean discharge for each month in cubic feet per second (second feet.) Column No. 4 gives the "total acre feet" flowing down the stream during each month. An "acre-foot" is the amount of water that would be necessary to cover one acre with a depth of one foot, which is 43,560 cubic feet. It furnishes a convenient unit for storage, where the water is to be used for irrigation. A cubic foot is practically 7.48 gallons, and is usually estimated at 7.5 gallons. An acre-foot is 43,560 cubic feet, or 320,851 gallons. One cubic foot per second flowing for 24 hours will cover an acre to a depth of 1.98 feet. It is therefore customary in round numbers to state that a cubic foot per second for a day of 24 hours is equivalent to 2 acre feet. Now, as one inch of rainfall per hour falling for 12 hours would cover one acre a foot deep, it is evident that rainfall at the rate of 1 inch per hour will produce a flow of 1 cubic foot per second, or 2 acre feet per 24 hours for each acre of watershed, no allowance being made for evaporation or percolation. It is also convenient to remember that 1,000,000 gallons in a reservoir are equal to a little more than 3 acre feet (3.069). In a general way it may be said that water stored in reservoirs is reckoned in acre-feet for irrigation, cubic feet for water power, and in millions of gallons for city water supply.

Columns 5 and 6 give the "run-off" from the drainage area. The run-off in inches and decimals of an inch is given, just as rainfall is given. For instance, a run-off of 2.23 inches from a given drainage area, means that enough water ran off during the month to have covered the entire drainage area or water-shed to a depth of 2.23 inches. This is convenient in estimating the proportion of the rain-fall on any drainage area that can be stored for irrigation, city water supply, or other purposes. The run-off in second-feet per square mile of drainage area, is obtained by dividing the mean discharge for the month by the number of square miles in the drainage area, and is useful in estimating the mean discharge of a tributary whose drainage area is known, and in comparing different drainage areas. The "run-off" is not a fixed percentage of the rainfall, but is that part of the rainfall which is not lost by evaporation into the air, or by percolation in subterranean outlets. Being a remainder and

not a percentage, it necessarily forms a much larger proportion of a heavy annual rainfall than it does of a small annual rainfall. For instance, in the Crystalline region of Georgia or Alabama where the annual precipitation is 45 to 55 inches, the run-off from the water-sheds is equal to fully one-half of the rainfall, while in regions having a precipitation of only 10 to 20 inches annually, the run-off is frequently less than one-fifth of the rainfall. Again, the geological character of the water-shed makes a vast difference in the run-off, even where the annual rainfall is the same, and where practically the same conditions of climate, topography, forest area and cultivation exist. There will be a smaller run-off from the water-shed having permeable geological strata underneath it, into which a part of the rain water can percolate, and furnish the supply to artesian wells in the lower country under which the same strata run, without regard to surface topography. In a comparison of two such water-sheds, one in the crystalline region, and the other in a regularly stratified formation, the difference of run-off should form a basis for estimating the artesian supply obtainable from the latter as a fountain head.

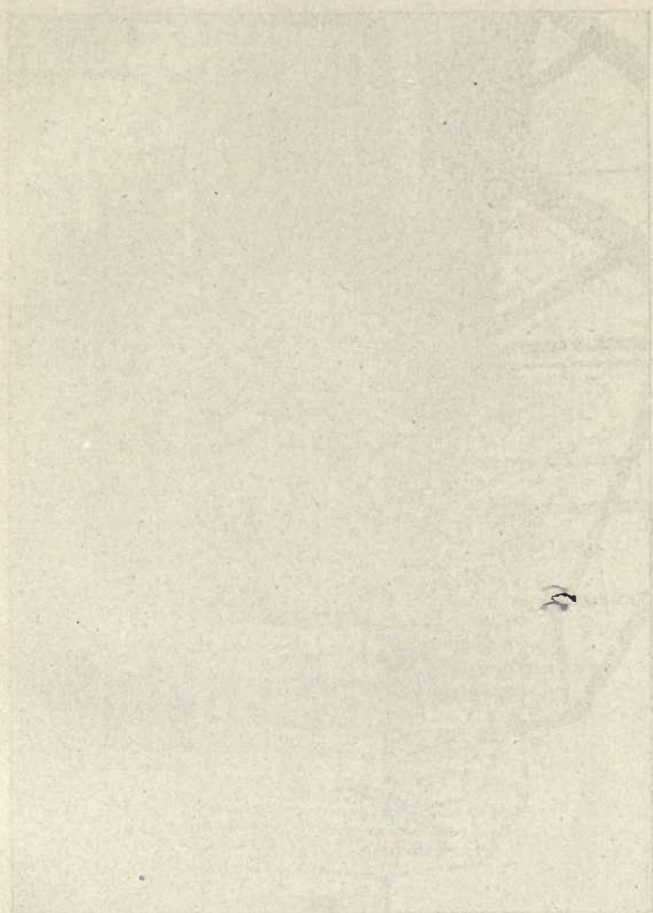




PLATE A. Bridge at Milstead on Tallapoosa River.

CHAPTER II.

TALLAPOOSA RIVER AND TRIBUTARIES.

1. TALLAPOOSA RIVER AT MILSTEAD, ALABAMA.

Tallapoosa River rises in the west-central part of Georgia and flows in a southwesterly direction into Alabama, where it joins the Coosa, to form Alabama River, 6 miles above Montgomery, Alabama. Its upper tributaries drain an area between the Chattahoochee and Coosa basins. At Tallassee, Alabama, it crosses the southern fall line. The shoals at this place have a fall of 60 feet, forming an obstruction to navigation. The drainage area is largely wooded, with cultivated fields at short intervals. A gaging station was established at Milstead on August 7, 1897, at the bridge of the Tallassee & Montgomery Railway, about one-fourth of a mile from Milstead, Alabama. The bridge is of iron, two spans of about 155 feet each, with short wooden trestles at each end. The initial point of measurement is the end of the iron bridge, left bank, downstream side. The rod of wire gage is fastened to outside of guard rail on downstream side of bridge. The bench mark is top of second cross-beam from left-bank pier, downstream end, and is 60.00 feet above datum. The channel is straight at the bridge, and bends above and below. The current is sluggish at low water and obstructed by center pier of bridge. The banks are high, but overflow at extreme high water for several hundred feet on each side. The bed is fairly constant, and all water is confined to the main channel by railroad embankments. The observer is Seth Johnson, a farmer and fruit grower, Milstead, Alabama. The plate A opposite shows this station.

The following discharge measurements were made during 1897 by Max Hall:

May 3, gage height, 6.20 feet; discharge, 7,333 second-feet.
July 15, gage height, 1.95 feet; discharge, 1,692 second-feet.
August 7, gage height, 2.42 feet; discharge, 2,292 second-feet.
September 4, gage height, 1.60 feet; discharge, 1,271 second-feet.
November 23, gage height, 1.20 feet; discharge, 677 second-feet.
December 16, gage height, 3.58 feet; discharge, 4,210 second-feet.

**Daily gage height, in feet, of Tallapoosa River at Milstead, Alabama, from August to December, 1897.*

Day.	Aug.	Sept.	Oct.	Nov.	Dec.	Day.	Aug.	Sept.	Oct.	Nov.	Dec.
1.....		1.70	0.80	0.90	1.50	17.....	1.90	1.10	0.80	1.20	2.80
2.....		1.80	.80	1.00	1.50	18.....	2.20	1.00	.90	1.20	2.40
3.....		1.60	.80	1.10	1.50	19.....	2.80	1.10	.90	1.20	2.10
4.....		1.60	.70	1.10	1.60	20.....	9.70	1.10	.90	1.10	2.00
5.....		1.60	.70	1.10	1.80	21.....	7.40	1.10	.80	1.20	1.90
6.....		1.40	.70	1.10	2.00	22.....	8.50	1.00	.80	1.10	2.00
7.....	2.45	1.40	.70	1.10	2.10	23.....	5.30	1.00	.90	1.10	2.40
8.....	1.90	1.30	.60	1.10	2.00	24.....	3.40	1.00	.90	1.20	2.40
9.....	1.70	1.20	.70	1.20	1.90	25.....	2.90	1.00	.80	1.20	2.40
10.....	1.50	1.20	.70	1.20	1.90	26.....	2.80	1.00	.90	1.20	2.80
11.....	1.50	1.10	.70	1.30	1.90	27.....	2.30	1.00	.90	1.20	2.60
12.....	2.70	1.10	.70	1.30	2.00	28.....	2.00	.90	.90	1.60	2.50
13.....	2.20	1.10	.70	1.30	1.90	29.....	1.80	.90	.90	1.50	2.30
14.....	2.00	1.10	.80	1.30	5.50	30.....	1.70	.80	.90	1.50	2.20
15.....	1.80	1.40	.80	1.20	4.70	31.....	1.70	.....	.90	.....	2.40
16.....	1.60	1.20	.80	1.20	3.60						

*See explanation, pages 11 to 14.

Rating table for Tallapoosa River at Milstead, Alabama, for 1897.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second-feet.	Feet.	Second-feet.	Feet.	Second-feet.	Feet.	Second-feet.
0.5	330	1.5	1,070	3.0	3,129	5.0	5,909
0.6	350	1.6	1,200	3.2	3,407	5.2	6,187
0.7	380	1.7	1,333	3.4	3,685	5.4	6,465
0.8	420	1.8	1,467	3.6	3,963	5.6	6,743
0.9	470	1.9	1,600	3.8	4,241	5.8	7,021
1.0	530	2.0	1,733	4.0	4,519	6.0	7,299
1.1	620	2.2	2,007	4.2	4,797	7.0	8,689
1.2	720	2.4	2,285	4.4	5,075	8.0	10,079
1.3	830	2.6	2,573	4.6	5,353	9.0	11,469
1.4	950	2.8	2,851	4.8	5,631		

NOTE—This table applied to the foregoing "Daily gage heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.

The following discharge measurements were made during 1898 by Max Hall and others:

Jan. 19—Gage height, 2.13 feet; discharge, 1,889 second-feet.
 Feb. 19—Gage height, 2.20 feet; discharge, 2,045 second-feet.
 March 18—Gage height, 2.56 feet; discharge, 2,646 second-feet.
 April 26—Gage height, 5.83 feet; discharge, 6,648 second-feet.
 May 17—Gage height, 1.55 feet; discharge, 1,059 second-feet.
 June 22—Gage height, 3.05 feet; discharge, 3,421 second-feet.
 July 7—Gage height, 1.62 feet; discharge, 1,262 second-feet.
 Aug. 5—Gage height, 13.67 feet; discharge, 15,295 second-feet.
 Sept. 3—Gage height, 2.76 feet; discharge, 3,010 second-feet.
 Nov. 29—Gage height, 5.16 feet; discharge, 5,477 second-feet.

Daily gage height, in feet, of Tallapoosa River at Milstead, Alabama, for 1898.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	2.90	2.30	1.90	4.80	2.60	1.10	1.50	3.60	4.30	1.30	2.30	4.90
2.....	1.90	2.20	1.80	3.90	2.50	1.10	1.30	2.90	3.20	1.30	2.20	4.40
3.....	1.80	2.10	1.90	3.10	2.20	1.10	1.20	2.80	2.70	1.40	2.20	7.70
4.....	1.70	2.00	2.40	3.00	2.10	1.10	1.10	11.50	2.70	16.00	2.10	10.00
5.....	1.70	2.00	2.90	17.00	2.00	1.10	1.20	14.00	4.00	32.00	2.10	8.60
6.....	1.80	2.00	2.80	18.80	2.00	1.10	1.30	8.90	4.60	23.50	2.20	6.80
7.....	1.80	2.00	2.50	12.10	1.90	1.00	1.70	10.10	6.00	16.40	2.70	5.60
8.....	1.80	2.00	2.30	7.10	1.90	.90	2.90	8.50	5.60	22.80	4.20	4.80
9.....	1.90	2.00	2.20	5.20	1.80	.90	4.90	7.90	4.50	14.00	2.80	4.60
10.....	1.90	1.90	2.00	4.00	1.80	.90	3.60	5.30	3.50	7.90	3.00	6.70
11.....	1.90	1.90	2.00	3.40	1.70	.80	4.40	17.30	2.90	5.90	7.10	6.10
12.....	2.40	1.90	2.00	3.10	1.70	.90	2.00	22.60	2.60	4.90	5.10	5.50
13.....	2.40	1.90	1.90	3.00	1.70	1.00	1.70	10.10	2.50	3.80	5.00	5.00
14.....	2.60	1.90	1.90	2.90	1.60	1.20	2.70	7.70	2.40	3.40	5.90	4.40
15.....	2.40	1.80	2.70	2.80	1.60	1.10	3.50	6.10	2.20	3.00	5.50	4.00
16.....	2.40	1.80	2.60	2.60	1.60	1.20	5.10	4.20	2.00	2.70	5.40	3.80
17.....	2.40	1.80	2.50	2.40	1.60	2.10	2.40	3.40	1.80	2.60	6.20	3.60
18.....	2.30	1.90	2.60	2.40	1.60	1.80	2.80	2.80	1.70	4.40	6.10	3.40
19.....	2.20	2.20	2.50	2.20	1.50	1.40	3.05	2.60	1.60	5.00	14.40	4.30
20.....	2.20	2.30	2.40	2.40	1.50	1.40	2.30	2.80	1.60	4.40	12.20	7.60
21.....	3.10	2.30	2.20	2.80	1.40	1.40	1.90	2.50	1.50	3.70	10.00	7.00
22.....	3.10	2.10	2.00	2.70	1.40	3.00	1.60	2.30	1.50	3.30	8.00	5.20
23.....	3.00	2.00	1.90	2.80	1.30	2.40	1.60	2.20	1.50	3.10	10.00	4.40
24.....	2.90	2.00	1.90	14.50	1.30	2.20	1.50	2.00	1.60	2.70	8.80	6.40
25.....	2.60	1.90	1.80	11.60	1.20	2.10	1.50	2.10	1.80	2.60	7.90	6.00
26.....	2.90	1.80	1.80	5.90	1.20	1.80	2.50	8.10	2.00	2.50	5.30	4.60
27.....	3.60	1.90	1.80	4.30	1.20	1.50	2.60	10.20	1.80	2.40	4.60	4.20
28.....	3.90	1.90	1.70	3.30	1.30	1.80	4.10	8.40	1.60	2.40	4.10	3.90
29.....	3.10	.....	2.20	2.95	1.20	2.70	2.80	7.00	1.50	2.40	4.90	3.80
30.....	2.65	.....	4.20	2.80	1.20	1.90	2.90	5.20	1.50	2.40	5.40	3.70
31.....	2.40	.....	5.30	.....	1.10	..	3.80	5.10	.....	2.30	.....	4.00

Rating table for Tallapoosa River at Milstead, Alabama, for 1898.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
<i>Feet.</i>	<i>Second Ft.</i>	<i>Feet.</i>	<i>Second Ft.</i>	<i>Feet.</i>	<i>Second Ft.</i>
0.8	540	2.4	2,380	8.0	8,820
0.9	655	2.5	2,495	8.5	9,395
1.0	770	2.6	2,610	9.0	9,970
1.1	885	2.7	2,725	9.5	10,545
1.2	1,000	2.8	2,840	10.0	11,120
1.3	1,115	2.9	2,955	10.5	11,695
1.4	1,230	3.0	3,070	11.0	12,270
1.5	1,345	3.5	3,645	11.5	12,845
1.6	1,460	4.0	4,220	12.0	13,420
1.7	1,575	4.5	4,795	12.5	13,995
1.8	1,690	5.0	5,370	13.0	14,570
1.9	1,805	5.5	5,945	13.5	15,145
2.0	1,920	6.0	6,520	14.0	15,720
2.1	2,035	6.5	7,095	14.5	16,295
2.2	2,150	7.0	7,670	15.0	16,870
2.3	2,265	7.5	8,245		

NOTE.—This table applied to the foregoing "Daily gage heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.

The following discharge measurements were made during 1899 by Max Hall:

April 17—Gage height, 6.34 feet; discharge, 7,444 second-feet.
 April 18—Gage height, 5.63 feet; discharge, 6,853 second-feet.
 May 17—Gage height, 2.80 feet; discharge, 3,000 second-feet.
 June 26—Gage height, 2.05 feet; discharge, 1,847 second-feet.
 September 9—Gage height, 1.36 feet; discharge, 1,016 second-feet.
 November 8—Gage height, 1.25 feet; discharge, 972 second-feet.
 December 18—Gage height, 2.66 feet; discharge, 2,844 second-feet.

Daily gage height, in feet, of Tallapoosa River, at Milstead, Alabama, for 1899.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	5.00	17.00	27.00	18.00	4.30	2.40	2.80	3.00	2.40	0.70	1.50	2.40
2.....	4.60	11.60	19.00	12.20	4.00	2.90	2.30	2.70	2.30	.70	1.40	2.50
3.....	3.90	24.50	13.50	6.50	3.90	2.40	1.90	3.10	2.10	.80	1.40	2.60
4.....	3.90	20.00	9.60	6.40	3.80	2.40	1.80	3.10	2.00	.90	1.30	2.60
5.....	3.90	12.90	14.20	8.50	3.70	2.30	1.60	2.50	1.80	1.00	1.30	2.90
6.....	3.80	11.90	13.20	9.70	3.60	2.20	1.50	2.30	1.60	1.40	1.20	2.20
7.....	7.40	17.50	10.10	10.30	3.50	2.10	1.50	2.20	1.60	1.40	1.20	2.00
8.....	8.00	27.00	8.60	13.00	3.60	2.00	2.00	2.00	1.40	1.30	1.20	1.90
9.....	7.10	19.00	7.70	13.00	3.50	1.90	2.20	1.80	1.40	1.30	1.20	1.80
10.....	6.40	13.80	7.20	11.20	3.40	1.70	2.00	1.60	1.30	1.30	1.20	1.90
11.....	18.50	10.00	6.80	8.40	3.30	1.90	1.80	1.50	1.20	1.40	1.30	2.00
12.....	16.80	8.30	6.60	7.00	3.20	2.00	1.70	1.70	1.20	1.40	1.30	15.20
13.....	13.00	7.40	6.50	6.50	3.10	2.00	1.50	1.60	1.20	1.30	1.30	13.20
14.....	11.60	7.00	6.40	6.20	3.10	2.70	1.40	1.60	1.10	1.30	1.30	8.20
15.....	9.40	6.10	7.20	6.00	3.00	2.70	1.30	1.50	1.00	1.20	1.30	5.00
16.....	7.80	10.40	12.20	7.10	2.90	2.60	1.30	4.00	1.00	1.10	1.30	3.70
17.....	12.70	11.50	11.00	6.60	2.80	2.10	1.20	3.90	1.00	1.20	1.60	3.00
18.....	10.00	10.60	10.20	5.60	2.70	1.90	1.10	2.20	1.00	1.10	1.50	2.60
19.....	8.00	9.30	14.80	5.50	2.60	1.80	1.60	1.90	1.10	1.20	1.50	2.50
20.....	6.50	8.30	13.90	5.40	2.50	1.80	1.40	1.70	1.00	1.30	1.50	2.70
21.....	5.70	8.30	10.40	5.20	2.60	1.70	8.40	1.50	.90	1.40	1.40	2.70
22.....	5.30	8.40	8.30	5.00	2.70	1.50	16.75	1.60	1.00	1.50	1.40	2.70
23.....	5.10	7.60	8.10	4.90	2.60	1.50	14.00	2.00	1.00	1.60	1.60	2.60
24.....	5.20	6.90	12.70	6.00	3.30	1.50	16.95	2.60	.90	1.80	1.80	9.30
25.....	5.20	6.40	8.70	10.00	4.60	1.50	7.90	1.90	.90	1.50	2.20	9.40
26.....	5.10	6.30	7.30	7.50	3.30	2.00	6.70	1.80	.90	1.40	4.60	7.20
27.....	4.80	25.00	6.90	6.60	2.80	2.50	6.80	3.70	.90	1.30	6.20	5.00
28.....	4.70	37.00	6.80	5.80	2.60	2.50	8.40	2.80	.80	1.20	4.80	4.00
29.....	5.10	.....	9.00	4.90	2.50	2.20	10.10	2.10	.80	1.50	3.60	3.50
30.....	5.20	.....	8.90	4.60	2.60	2.70	5.40	1.90	.80	1.50	2.80	3.10
31.....	6.50	.....	13.85	.....	2.50	.. ..	4.40	2.30	.....	1.60	.....	2.90

Rating table for Tallapoosa River at Milstead, Alabama, for 1899.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second Ft.	Feet.	Second Feet.	Feet.	Second Ft.
0.7	320	6.5	7,437	17.5	20,977
0.8	430	7.0	8,052	18.0	21,582
0.9	550	7.5	8,667	18.5	22,179
1.0	672	8.0	9,282	19.0	22,812
1.1	795	8.5	9,897	19.5	23,427
1.2	918	9.0	10,512	20.0	24,042
1.3	1,041	9.5	11,127	20.5	24,657
1.4	1,164	10.0	11,742	21.0	25,272
1.5	1,287	10.5	12,357	21.5	25,887
1.6	1,410	11.0	12,972	22.0	26,502
1.7	1,533	11.5	13,587	22.5	27,117
1.8	1,656	12.0	14,202	23.0	27,732
1.9	1,779	12.5	14,817	23.5	28,347
2.0	1,902	13.0	15,432	24.0	28,962
2.5	2,517	13.5	16,047	24.5	29,577
3.0	3,132	14.0	16,662	25.0	30,192
3.5	3,747	14.5	17,277	25.5	30,807
4.0	4,362	15.0	17,892	26.0	31,422
4.5	4,977	15.5	18,507	26.5	32,037
5.0	5,592	16.0	19,122	27.0	32,652
5.5	6,207	16.5	19,737	27.5	33,267
6.0	6,822	17.0	20,352	27.9	33,779

NOTE—This table applied to the foregoing “Daily gage heights” gives the cubic feet per second flowing in the river on each date for which the gage height is given.

During the year 1900 the following discharge measurements were made by Max Hall:

Feb. 23—Gage height, 9.20 feet; discharge, 9,956 second-feet.

March 5—Gage height, 6.70 feet; discharge, 7,088 second-feet.

Dec. 3—Gage height, 2.95 feet; discharge, 3,031 second-feet.

Daily gage height, in feet, of Tallapoosa River near Milstead, Alabama, for 1900.

Day.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	2.70	2.50	13.20	5.50	6.30	2.60	9.00	6.50	2.70	1.80	2.50	3.30
2.....	2.60	2.40	13.10	5.30	5.90	2.70	9.10	4.50	8.00	1.60	3.30	3.30
3.....	2.40	2.30	10.70	5.00	5.40	3.00	10.60	3.50	8.10	1.50	6.10	3.30
4.....	2.30	4.50	8.00	5.30	4.90	3.50	7.10	2.80	4.40	1.80	6.50	3.50
5.....	2.30	4.20	6.80	4.80	4.70	3.30	8.00	2.70	3.00	3.30	7.10	3.90
6.....	2.30	4.30	6.10	4.70	3.90	3.50	5.20	2.50	2.40	6.40	5.50	3.90
7.....	2.20	4.40	5.60	4.60	3.80	3.30	4.40	2.30	2.20	3.40	4.10	3.80
8.....	2.20	3.80	10.90	4.60	3.70	5.90	4.00	2.20	2.00	3.20	3.50	3.80
9.....	2.20	5.20	13.80	4.50	3.60	9.70	3.50	2.10	1.80	2.60	3.00	3.10
10.....	2.20	8.90	12.70	4.60	3.50	6.90	7.60	2.00	1.70	2.60	2.90	3.10
11.....	2.60	19.00	10.00	5.50	3.30	5.60	5.50	1.90	1.70	3.00	2.70	2.80
12.....	7.30	30.00	7.90	10.60	3.20	4.60	4.10	1.90	1.60	2.80	2.60	2.80
13.....	6.00	43.25	6.60	11.50	3.10	5.30	4.70	1.80	1.50	3.40	2.60	2.80
14.....	4.50	42.00	5.90	9.00	3.00	4.00	6.70	1.90	1.50	3.30	2.50	7.70
15.....	4.00	31.90	5.40	6.60	2.90	3.80	6.00	2.20	14.00	3.30	2.50	9.10
16.....	3.40	22.80	7.00	5.30	2.90	3.50	5.10	2.70	25.60	2.70	2.50	7.30
17.....	3.00	13.50	7.20	4.70	2.80	4.50	3.80	3.10	18.00	2.70	2.50	5.20
18.....	2.90	8.90	5.60	13.90	2.80	5.90	3.80	2.50	11.00	2.20	2.50	4.20
19.....	3.70	7.00	5.40	17.00	2.80	5.10	3.60	4.00	5.30	2.10	2.50	4.00
20.....	9.50	6.10	6.00	15.00	2.90	5.90	3.10	4.20	3.60	2.00	2.50	8.60
21.....	7.50	6.50	11.40	16.90	2.80	5.90	3.00	2.50	3.00	1.90	2.50	17.00
22.....	5.90	9.80	10.50	13.30	3.00	5.50	2.80	2.20	2.50	2.00	4.00	13.50
23.....	4.60	9.50	7.60	10.30	3.10	5.40	2.70	2.00	2.30	4.80	4.00	10.40
24.....	3.90	8.90	15.50	13.20	3.40	20.00	2.60	2.30	2.20	12.10	3.90	11.30
25.....	3.50	8.40	15.20	12.50	3.50	25.04	2.50	3.30	2.00	10.50	3.90	8.70
26.....	3.10	8.00	16.00	9.40	5.00	20.00	2.50	3.40	2.00	9.00	10.50	6.60
27.....	3.00	7.00	13.70	7.50	4.50	16.00	2.80	3.60	2.00	6.00	8.80	5.60
28.....	2.80	6.00	11.20	6.40	3.20	18.00	2.90	2.70	2.00	4.20	6.70	5.00
29.....	2.70	.....	8.70	6.20	2.70	13.80	3.20	2.60	2.00	2.20	4.50	4.60
30.....	2.60	.....	7.10	6.10	3.00	9.00	8.10	2.10	1.90	2.90	3.70	4.30
31.....	2.50	.....	6.20	.....	2.50	.....	10.60	3.20	.....	2.70	.....	11.00

The following measurements were made by Max Hall and James R. Hall during 1901:

Feb. 12—Gage height, 10.70 feet; discharge, 11,759 second-feet.

March 13—Gage height, 5.55 feet; discharge, 5,644 second-feet.

October 29—Gage height, 1.70 feet; discharge, 1,583 second-feet.

Daily gage height of Tallapoosa River at Milstead, Ala., for 1901.

Day.	Jan.	Feb.	Mar.	Apr	May.	Jun	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	14.30	7.40	5.30	26.00	5.00	8.70	5.10	2.10	4.00	2.20	1.70	2.00
2.....	15.50	7.20	5.20	22.00	4.80	8.60	4.20	2.20	3.50	2.90	1.70	2.00
3.....	14.50	7.50	5.10	23.00	4.70	9.7	4.30	2.30	2.90	6.10	1.70	1.95
4.....	11.00	24.07	5.00	18.00	4.60	10.90	4.00	2.20	2.70	6.40	1.80	2.20
5.....	9.80	26.00	4.90	14.20	4.40	8.00	3.30	2.10	2.40	5.10	1.95	2.40
6.....	8.70	18.30	4.70	10.80	4.30	7.1	3.60	2.10	2.20	4.00	1.95	2.40
7.....	7.40	12.60	4.50	9.60	4.20	12.10	4.00	2.60	2.10	3.20	2.00	2.30
8.....	6.10	10.50	4.40	7.20	4.20	10.10	4.80	2.60	2.00	2.50	1.90	2.20
9.....	5.30	13.10	4.40	6.80	4.10	6.30	4.70	2.30	2.00	2.10	1.90	2.20
10.....	5.00	14.00	4.70	6.20	3.90	5.90	3.70	2.30	1.90	2.00	2.00	2.20
11.....	6.00	12.60	7.70	5.80	3.80	4.50	2.90	2.10	1.90	1.90	1.90	2.30
12.....	24.20	10.90	6.00	5.60	3.80	4.10	2.60	2.30	1.80	1.90	1.80	2.50
13.....	30.50	9.80	5.50	6.10	3.80	4.10	2.60	2.90	1.80	1.90	1.80	2.40
14.....	22.00	8.20	6.00	8.80	4.50	5.1	2.10	2.50	2.80	2.00	1.75	2.60
15.....	18.00	7.70	5.50	10.70	4.30	7.30	2.20	2.10	4.20	2.10	1.75	6.00
16.....	11.50	6.90	5.10	8.70	4.00	5.70	2.30	3.20	3.10	2.10	1.80	13.40
17.....	12.20	6.60	4.50	7.70	3.60	6.00	5.30	8.90	3.00	2.00	1.80	9.00
18.....	12.10	6.50	4.10	11.00	3.50	4.80	4.80	8.00	5.60	1.90	1.80	6.00
19.....	9.70	6.30	4.00	23.00	3.00	4.40	4.30	6.60	9.10	1.90	1.90	3.90
20.....	8.00	6.20	6.00	22.00	5.50	4.00	3.50	5.90	7.10	1.80	2.10	3.60
21.....	7.10	5.90	7.90	13.40	10.60	3.1	3.30	9.60	5.00	1.80	2.20	3.40
22.....	6.80	5.80	6.30	10.70	16.20	3.30	3.10	7.20	3.80	1.70	2.20	3.20
23.....	6.40	5.70	6.20	8.90	14.20	3.30	2.80	20.75	2.70	1.70	2.30	3.10
24.....	6.20	6.00	10.10	7.60	12.00	3.20	3.50	21.00	2.30	1.70	2.20	3.10
25.....	7.00	6.10	8.90	6.90	9.00	9.10	2.40	9.40	2.10	1.70	2.20	3.00
26.....	6.80	6.10	10.20	6.50	10.00	3.10	2.20	5.90	2.10	1.60	2.10	2.90
27.....	6.70	6.00	14.30	6.10	8.40	2.40	2.50	4.20	2.00	1.70	2.30	2.95
28.....	6.70	5.50	17.50	5.80	6.40	2.80	2.50	5.90	2.10	1.70	2.20	3.05
29.....	6.60	.....	15.00	5.50	6.00	2.60	2.30	8.70	2.30	1.70	2.10	35.00
30.....	6.80	.....	9.90	5.20	5.10	2.60	2.20	7.70	2.50	1.70	2.00	47.00
31.....	7.00	.....	31.50	.....	4.80	.....	2.20	4.70	.....	1.70	.....	39.00

Rating table for Tallapoosa River at Milstead, Ala., for 1900 and 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height	Discharge.
Feet.	Second Ft.	Feet.	Second Ft.	Feet.	Second Ft.
1.5	1,337	4.1	3,262	18.0	19,900
1.6	1,450	4.2	4,375	19.0	21,025
1.7	1,562	4.3	4,487	20.0	22,150
1.8	1,675	4.4	4,600	21.0	23,275
1.9	1,787	4.5	4,712	22.0	24,400
2.0	1,900	4.6	4,825	23.0	25,525
2.1	2,012	4.7	4,937	24.0	26,650
2.2	2,125	4.8	5,050	25.0	27,775
2.3	2,237	4.9	5,162	26.0	28,900
2.4	2,350	5.0	5,275	27.0	30,025
2.5	2,462	5.5	5,837	28.0	31,150
2.6	2,575	6.0	6,400	29.0	32,275
2.7	2,687	6.5	6,962	30.0	33,400
2.8	2,800	7.0	7,525	31.0	34,525
2.9	2,912	7.5	8,087	32.0	35,650
3.0	3,025	8.0	8,650	33.0	36,775
3.1	3,137	8.5	9,212	34.0	37,900
3.2	3,250	9.0	9,775	35.0	39,025
3.3	3,362	10.0	10,900	36.0	41,150
3.4	3,475	11.0	12,025	37.0	41,275
3.5	3,587	12.0	13,150	38.0	42,400
3.6	3,700	13.0	14,275	39.0	43,525
3.7	3,812	14.0	15,400	40.0	44,650
3.8	3,925	15.0	16,525	41.0	45,775
3.9	4,037	16.0	17,650	42.0	46,900
4.0	4,150	17.0	18,775	43.0	48,025

NOTE—This table applied to the foregoing "Daily gage heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.

**Estimated monthly discharge of Tallapoosa River at Milstead, Ala.*

[Drainage area, 3,840 square miles.]

Month.	Discharge in second-feet.			Total in acre-feet.	Run-off.	
	Maxi-mum.	Mini-mum.	Mean.		Depth in inches.	Second-feet per square mile.
1897.						
August, 7-31	12,440	1,070	3,173	157,340	0.77	0.83
September	1,467	420	742	44,155	0.21	0.19
October	470	380	424	26,070	0.12	0.11
November	1,200	470	729	43,379	0.21	0.19
December	6,604	1,070	2,214	136,135	0.67	0.58
1898.						
January	4,105	1,575	2,426	149,170	0.72	0.63
February	2,265	1,690	1,912	106,187	0.52	0.50
March	5,715	1,575	2,313	142,222	0.69	0.60
April	21,240	2,150	5,748	342,029	1.67	1.50
May	2,610	885	1,493	91,802	0.45	0.39
June	3,070	540	1,314	78,188	0.38	0.34
July	5,485	885	2,493	153,290	0.75	0.65
August	25,610	1,920	7,418	456,118	2.22	1.93
September	6,520	1,345	2,637	156,912	0.77	0.69
October	36,420	1,115	7,280	447,633	2.19	1.90
November	16,180	2,035	6,049	359,940	1.76	1.58
December	11,120	3,530	5,741	353,003	1.73	1.50
1899.						
January	22,197	4,116	8,417	517,541	2.53	2.19
February	44,952	6,945	15,688	871,267	4.26	4.09
March	32,652	7,314	12,399	762,385	3.72	3.23
April	21,582	5,100	9,016	536,489	2.62	2.35
May	4,731	2,517	3,351	206,045	1.00	0.87
June	2,999	1,287	2,040	121,388	0.59	0.53
July	20,290	795	4,985	306,516	1.50	1.30
August	4,362	1,287	2,222	136,625	0.67	0.58
September	2,394	430	984	58,552	0.29	0.26
October	1,656	320	1,014	62,348	0.30	0.26
November	7,068	918	1,787	106,334	0.53	0.47
December	18,138	1,656	4,728	290,713	1.42	1.23
1900.						
January	10,335	2,125	3,728	229,226	1.12	0.97
February	48,305	2,237	12,950	719,206	3.50	3.37
March	17,650	5,723	10,208	627,665	3.07	2.66
April	18,775	4,712	9,016	536,489	2.62	2.35
May	6,736	2,462	3,718	228,611	1.12	0.97
June	27,831	2,575	8,317	494,896	2.42	2.17
July	11,572	2,462	5,405	332,340	1.63	1.41
August	6,960	1,675	2,814	173,026	0.84	0.73
September	28,447	1,337	4,975	296,033	1.45	1.30
October	13,262	1,337	3,787	232,854	1.14	0.99
November	11,460	2,462	4,224	251,345	1.23	1.10
December	18,775	2,800	6,475	398,132	1.95	1.69
The year	48,305	1,337	6,301	4,519,823	22.09	1.64

*See explanation page 13.

Estimated monthly discharge of Tallapoosa River near Milstead, Ala.

[Drainage area, 3,840 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maxi- mum.	Mini- mum.	Mean.	Depth in inches.	Second- feet per square mile.
1901.					
January	33,962	5,275	11,476	3.45	2.99
February	28,900	5,837	10,440	2.83	2.72
March	35,087	4,150	8,374	2.52	2.18
April	28,900	5,499	12,020	3.49	3.13
May	17,875	3,587	6,440	1.94	1.68
June	13,262	2,775	5,976	1.74	1.56
July	5,387	2,012	3,398	1.01	.88
August	23,275	2,012	5,904	1.78	1.54
September	9,887	1,675	3,137	.91	.82
October	6,849	1,562	2,364	.71	.62
November	2,237	1,562	1,855	.54	.48
December	*70,000	1,843	8,282	2.49	2.16
The year	*70,000	1,562	6,639	23.41	1.73

*Approximate.

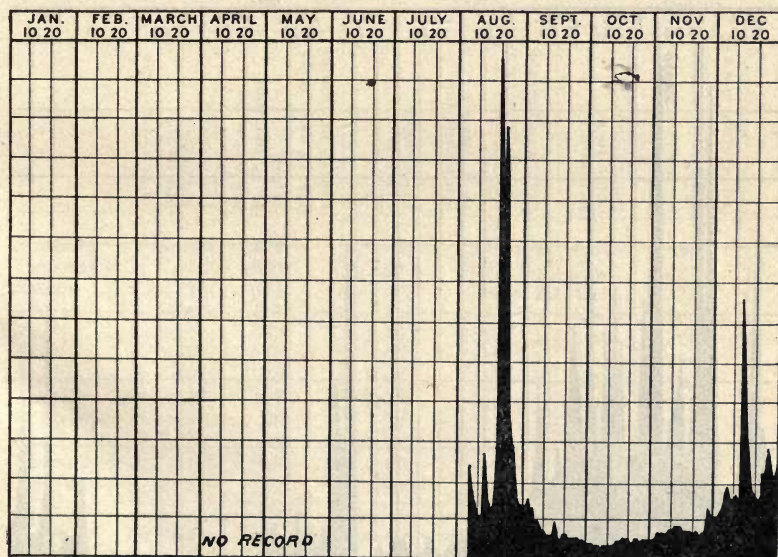


Fig. 1—Discharge of Tallapoosa River at Milstead, Ala., 1897.

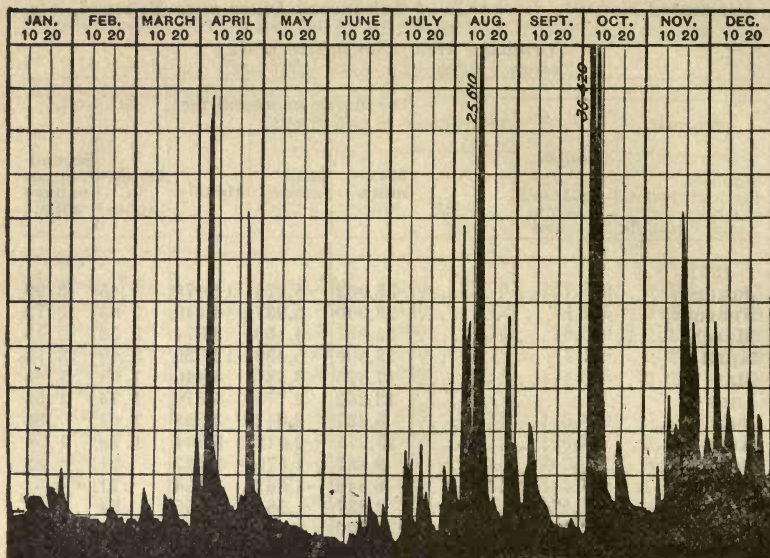


Fig. 2—Discharge of Tallapoosa River at Milstead, Ala., 1898.

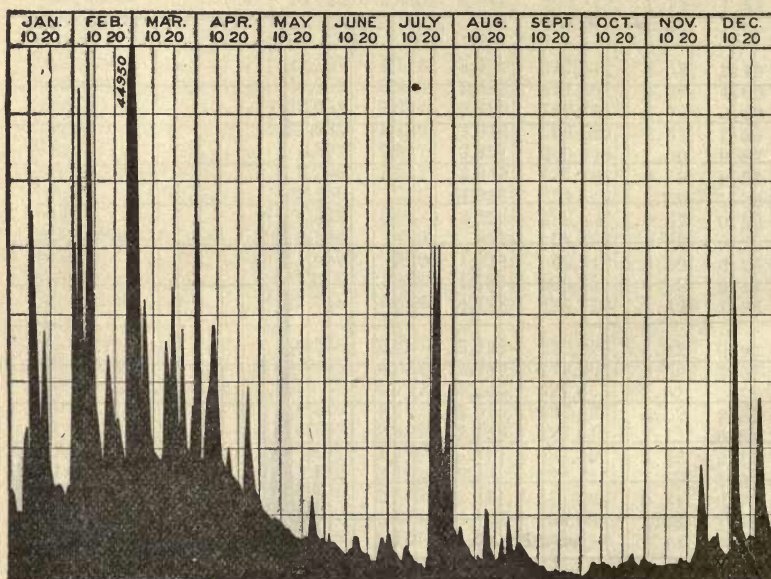


Fig. 3—Discharge of Tallapoosa River at Milstead, Ala., 1899.

The amount of water delivered from the drainage basin as measured at the points named below has been computed in terms of depth in inches. The normals given are the monthly averages for times during which measurements or computations were had. The figures for the yearly normal are the sums of these monthly averages.

Depth of run-off in inches from the drainage basin of Tallapoosa River at Milstead, Ala.

Day.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.	An- nual.
Normal ...	1.96	2.78	2.50	2.60	1.13	1.28	1.22	1.38	.86	1.09	1.02	1.90	19.70
1898	.72	.52	.69	1.67	.45	.38	.75	2.22	.77	2.19	1.76	1.73	13.85
1899	2.53	4.26	3.72	2.62	1.00	.59	1.50	.67	.29	.30	.53	1.42	19.43
1900	1.12	3.50	3.07	2.62	1.12	2.42	1.63	.84	1.45	1.14	1.23	1.95	22.09
1901	3.45	2.83	2.52	3.49	1.94	1.74	1.01	1.78	.91	.71	.54	2.49	23.41

Minimum monthly discharge of Tallapoosa River at Milstead, Ala., with corresponding net horsepower per foot of fall on a water wheel realizing 80 per cent. of the theoretical power.

	1899			1900			1901		
	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days dura- tion of minimum.	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days dura- tion of minimum.	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days dura- tion of minimum.
January ...	4,116	374	1	2,125	193	4	5,275	480	1
February .	6,945	631	1	2,237	203	1	5,837	531	1
March	7,314	665	1	5,725	520	2	4,150	377	1
April	5,100	464	1	4,712	428	1	5,500	500	1
May	2,517	229	3	2,462	224	1	3,587	326	2
June	1,287	117	4	2,575	234	1	2,575	234	2
July	795	72	1	2,462	224	2	2,012	183	1
August ...	1,287	117	3	1,675	152	1	2,012	183	5
September	430	39	3	1,337	122	2	1,675	152	2
October ...	320	29	2	1,337	122	1	1,562	142	10
November .	918	83	5	2,462	244	9	1,562	142	3
December .	1,656	151	1	2,800	255	3	1,843	168	1

NOTE—To find the minimum net horse power available at a shoal on this stream, near this station, for any month, multiply the total fall of the shoal by the "net H. P. per foot of fall" in this table for that month.

2. TALLAPOOSA RIVER NEAR SUSANNA, ALABAMA.

This station was established July 27, 1900, by J. R. Hall. It is located at the mouth of Blue Creek, which is 10 feet above the east landing of McCarty's ferry, 13 miles southwest of Dadeville, and 3 miles from Susanna, the nearest postoffice. The rod is graduated to feet and tenths; it is 18 feet long, and is nailed vertically to a tree overhanging the water on the south side of the creek at the junction of the creek and the river. The gage is referred to a bench mark on a white hickory tree about 40 feet from the rod on the south bank of the creek, and is 376.67 feet above tide water. Discharge measurements are made from a boat held in place by a wire stretched across the river, upon which the distances from the initial point are tagged. The section is an exceptionally good one, depth and current being almost uniform the entire width of the stream. The observer is T. A. Walls, a farmer who lives 1 mile from the station. During 1900 and 1901 the following discharge measurements were made by James R. Hall:

1900:

July 27—Gage height, 1.80 feet; discharge, 2,309 second-feet.

August 9—Gage height, 1.55 feet; discharge, 1,900 second-feet.

September 28—Gage height, 1.50 feet; discharge, 1,809 second-feet.

November 24—Gage height, 2.40 feet; discharge, 3,629 second-feet.

1901:

July 9—Gage height, 2.80 feet; discharge, 5,628 second-feet.

Feb. 27.—Gage height, 2.90 feet; discharge, 5,135 second-feet.

NOTE—The gage was washed away, and this station was discontinued on March 30th, 1901.

Daily gage height, in feet, of Tallapoosa River, near Susanna, Ala., for 1900.

Day.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Day.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....		5.80	2.40	1.40	1.80	2.00	17.....	.....	1.95	8.40	2.35	1.75	2.60
2.....		4.00	3.80	1.40	1.70	2.00	18.....	.....	1.95	4.80	2.30	1.75	2.50
3.....		2.00	4.80	1.40	1.70	2.10	19.....	.....	1.80	3.00	2.20	1.80	2.40
4.....		1.80	4.20	1.35	1.65	2.20	20.....	.....	1.75	2.50	2.10	1.85	2.50
5.....		1.80	2.25	1.30	1.65	2.30	21.....	.....	1.70	1.80	1.90	1.85	5.80
6.....		2.10	1.50	2.80	1.65	2.50	22.....	.....	1.70	1.80	1.70	1.90	4.50
7.....		2.20	1.45	3.00	1.60	2.40	23.....	.....	1.90	1.80	3.90	2.40	4.00
8.....		1.70	1.45	2.50	1.60	2.40	24.....	.....	2.00	1.70	6.00	2.40	4.00
9.....		1.55	1.40	1.85	1.60	2.40	25.....	.....	2.05	1.60	5.00	3.00	3.70
10.....		1.50	1.35	1.80	1.60	2.30	26.....	.....	2.50	1.50	4.30	4.90	3.20
11.....		1.40	1.35	1.75	1.60	2.10	27.....	.....	1.80	2.15	1.50	4.10	4.20
12.....		1.40	1.35	1.70	1.55	2.00	28.....	.....	1.90	2.00	1.50	2.30	2.70
13.....		1.40	1.35	1.90	1.55	1.90	29.....	.....	1.80	1.90	1.45	2.20	3.00
14.....		1.40	1.30	2.40	1.60	3.90	30.....	.....	4.00	1.80	1.45	1.90	2.70
15.....		1.40	1.35	2.45	1.60	3.90	31.....	.....	.680	2.25	.....	1.85	.....
16.....		1.90	11.70	2.40	1.60	2.80							2.90

Daily gage height of Tallapoosa River at Susanna, Ala., for 1901.

Day.	Jan.	Feb.	Mar.	Day.	Jan.	Feb.	Mar.	Day.	Jan.	Feb.	Mar.
1.....	6.0	3.40	2.70	12.....	13.5	4.00	3.10	23.....	3.0	2.80	2.70
2.....	6.0	3.45	2.60	13.....	11.5	3.50	2.90	24.....	3.1	2.90	3.30
3.....	5.1	3.30	2.65	14.....	8.0	3.04	2.60	25.....	3.4	3.00	3.40
4.....	4.5	11.50	2.70	15.....	6.1	3.30	2.50	26.....	3.1	3.00	3.60
5.....	3.9	9.50	2.65	16.....	4.5	3.20	2.40	27.....	3.2	2.90	7.40
6.....	3.5	6.50	2.60	17.....	5.0	3.10	2.40	28.....	3.1	2.80	6.90
7.....	3.2	4.40	2.50	18.....	4.5	3.10	2.40	29.....	3.0	.....	6.10
8.....	3.0	4.30	2.40	19.....	3.9	3.05	2.45	30.....	3.2	.....	4.10
9.....	2.9	4.80	2.50	20.....	3.4	3.00	3.00	31.....	3.3	.....	.....
10.....	2.8	4.90	2.70	21.....	3.2	2.90	3.40				
11.....	3.4	4.50	3.30	22.....	3.1	2.85	2.90				

Rating table for Tallapoosa River, at Susanna, Ala., 1900 and 1901.

Gage Height.	Discharge.	Gage Height.	Discharge.
1.0	.....	4.0	11,030
1.2	.....	4.2	11,930
1.4	1,680	4.4	12,830
1.6	1,960	4.6	13,730
1.8	2,320	4.8	14,630
2.0	2,740	5.0	15,530
2.2	3,230	5.5	17,780
2.4	3,850	6.0	20,030
2.6	4,730	6.5	22,280
2.8	5,630	7.0	24,530
3.0	6,530	8.0	29,030
3.2	7,430	9.0	33,530
3.4	8,330	10.0	38,030
3.6	9,230	11.0	42,530
3.8	10,130	11.7	45,680

NOTE—This table applied to the foregoing "Daily gage heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.

Estimated monthly discharge of Tallapoosa River, near Susanna, Alabama.

[Drainage area, 2,610 square miles.]

Month	Discharge in second-feet.			Total in acre-feet.	Run-off.	
	Maximum.	Minimum.	Mean.		Depth in inches.	Second feet per square mile.
1900.						
July 27 to 31.....	.....	.....	8,364	.....	.....	.....
August	19,130	1,680	3,258	200,327	1.44	1.25
September	45,680	1,570	6,083	361,964	2.60	2.33
October	20,030	1,570	4,776	293,665	2.11	1.83
November	15,080	1,885	3,676	218,737	1.57	1.41
December	19,130	2,520	6,288	386,634	2.78	2.41

Estimated monthly discharge of Tallapoosa River, near Susanna, Alabama.

[Drainage area, 2,610 square miles.]

Month.	Discharge in second-feet			Run-off.	
	Maxi- mum.	Mini- mum.	Mean.	Depth in inches.	Second- feet per square mile.
1901.					.
January	53,780	5,630	13,265	5.86	5.08
February	44,780	5,630	11,303	4.51	4.33
March	26,330	3,850	7,546	3.31	2.89

Minimum monthly discharge of Tallapoosa River at Susanna, Ala., with corresponding net horsepower per foot of fall on a water wheel realizing 80 per cent. of the theoretical power.

[Drainage area, 2,610 square miles.]

	1900				1901		
	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.		Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.
July	2,320	211	2	January	5,630	512	1
August	1,680	153	5	February ...	5,630	512	2
September	1,570	143	1	March	3,850	350	4
October	1,570	143	1				
November	1,885	171	2				
December	2,520	229	1				

NOTE.—To find the minimum net horse power available at a shoal on this stream, near this station, for any month, multiply the total fall of the shoal by the "net H. P. per foot of fall" in this table for that month.

3. TALLAPOOSA RIVER, NEAR STURDEVANT, ALABAMA.

This station was established July 19, 1900, by J. R. Hall. It is located at the bridge, Columbus & Western Division of the Central of Georgia Railroad, a fourth of a mile west of Sturdevant. The gage rod is 20 feet high, and is graduated to feet and tenths. It is in two sections, and is fastened verti-

cally, the shorter section to a post at the edge of the waer on the east bank, about 20 feet below the bridge, and the longer section to the first stone pier from the east bank. It is so set that when the water rises above the short section it is on the long section, and the readings are made as from one continuous rod. The initial point of sounding is the east end of the bridge. The section is broken by three piers and by some large rocks below the bridge. The gage is referred to a bench mark consisting of a nail in the southwest corner of pier No. 2, east side of the river, 455.70 feet above tide water, and 14.20 feet above the zero of the gage. The observer is B. F. Neighbors, farmer and postmaster at Sturdevant, who lives a fourth of a mile from the station. During 1900 the following discharge measurements were made by James R. Hall:

July 20—Gage height, 2.85 feet; discharge, 2,603 second-feet.
August 13—Gage height, 1.95 feet; discharge, 1,887 second-feet.

Daily gage height, in feet, of Tallapoosa River near Sturdevant, Ala. for 1900.

Day.	July	Aug	Sept	Oct	Nov	Dec	Day.	July	Aug	Sept	Oct	Nov	Dec
1.....		4.30	3.40	1.80	2.50	2.90	17.....		3.00	7.00	2.60	2.30	3.20
2.....		3.40	6.10	1.70	3.40	2.80	18.....		2.80	5.00	2.20	2.20	3.10
3.....		2.80	4.20	1.60	4.70	2.70	19.....	2.95	4.00	3.80	2.10	2.20	3.00
4.....		2.50	2.90	1.60	3.60	3.00	20.....	2.80	2.90	3.00	2.00	2.20	5.20
5.....		2.40	2.50	3.30	3.30	3.20	21.....	3.65	2.40	2.70	1.90	2.50	6.80
6.....		2.35	2.20	3.00	3.20	3.30	22.....	2.75	2.30	2.50	2.10	3.20	5.30
7.....		2.25	2.00	3.00	2.90	3.20	23.....	2.65	2.40	2.40	5.00	3.50	4.90
8.....		2.20	1.90	2.90	2.70	3.00	24.....	2.55	2.70	2.30	7.30	3.20	5.60
9.....		2.10	1.80	3.10	2.60	2.80	25.....	2.65	2.50	2.20	6.40	4.80	4.70
10.....		2.00	1.70	3.20	2.50	2.70	26.....	2.60	2.80	2.10	5.40	5.90	4.20
11.....	1.95	1.60	3.30	2.40	2.60		27.....	2.50	2.60	2.00	4.20	5.40	3.90
12.....	1.90	1.60	3.40	2.40	2.60		28.....	2.70	2.50	2.00	3.60	3.40	3.60
13.....	2.00	1.60	3.50	2.40	2.70		29.....	6.50	2.40	2.00	2.90	3.20	3.40
14.....	2.10	1.80	3.50	2.30	4.70		30.....	7.60	2.30	1.90	2.70	3.10	3.50
15.....	2.60	8.80	3.00	2.30	3.00		31.....	5.00	2.80		2.60		7.50
16.....	3.40	12.00	2.60	2.30	3.70								

During the year 1901 James R. Hall made one measurement, as follows:

March 8—Gage height, 3.40 feet; discharge, 3,774 second-feet.

During the year 1902 the following discharge measurements have been made at Sturdevant by W. E. Hall:

July 11—Gage height, 1.85 feet; discharge, 1,440 second-feet.

September 17—Gage height, 0.80 feet; discharge, 658 second-feet.

October 9—Gage height, 1.08 feet; discharge, 858 second-feet.

November 12—Gage height, 1.34 feet; discharge, 1,000 second-feet.

Daily gage height of Tallapoosa River at Sturdevant, Ala., for 1901.

Day.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	7.0	4.6	3.8	7.4	3.8	5.5	4.0	3.1	3.2	2.4	1.6	1.7
2.....	6.8	4.5	3.8	6.8	3.7	5.5	3.5	2.8	2.9	4.5	1.6	1.7
3.....	6.0	5.8	3.7	8.3	3.7	5.3	3.2	2.5	2.7	6.0	1.6	2.1
4.....	5.4	12.9	3.7	7.4	3.6	5.2	3.0	2.3	2.6	3.4	1.6	2.2
5.....	4.9	9.4	3.6	5.7	3.5	4.8	2.9	2.3	2.4	2.7	1.7	2.3
6.....	5.2	7.7	3.6	5.0	3.5	4.6	2.8	2.2	2.3	2.3	1.8	2.2
7.....	5.1	6.5	3.5	4.7	3.4	5.6	4.3	2.1	2.2	2.1	1.8	2.1
8.....	4.0	5.4	3.4	4.4	3.4	4.9	4.0	2.4	2.1	2.0	1.8	2.1
9.....	4.0	5.7	3.4	4.2	3.3	3.8	3.4	2.2	2.0	2.0	1.8	2.2
10.....	4.1	5.4	3.9	4.0	3.3	3.6	3.0	2.0	2.0	2.0	1.8	2.2
11.....	6.0	5.2	4.3	3.9	3.3	3.4	2.6	2.2	2.0	1.9	1.7	2.3
12.....	14.1	5.1	4.0	3.9	3.2	3.3	2.3	2.4	2.0	1.9	1.7	2.2
13.....	11.0	4.8	3.8	4.1	3.2	3.2	2.2	2.3	2.0	2.1	1.7	2.1
14.....	9.2	4.6	3.6	6.0	3.4	4.9	2.1	2.2	4.0	2.1	1.8	3.0
15.....	6.1	4.4	3.4	6.4	3.3	4.4	2.1	2.0	3.4	2.0	1.8	7.8
16.....	5.3	4.3	3.3	5.3	4.2	4.1	2.0	5.3	2.8	2.0	1.8	5.9
17.....	5.7	4.2	3.3	4.7	3.1	3.8	2.2	7.2	3.6	1.9	1.8	4.1
18.....	5.3	4.2	3.2	4.4	3.0	3.6	3.8	5.9	7.0	1.9	1.8	3.5
19.....	4.0	4.1	3.2	8.5	3.0	3.3	3.6	5.3	5.2	1.8	2.0	3.0
20.....	4.4	4.1	3.6	9.0	3.3	3.1	3.2	6.6	4.3	1.8	2.2	2.8
21.....	4.3	4.0	4.3	6.7	6.1	3.0	3.0	5.8	3.4	1.7	2.2	2.6
22.....	4.2	4.0	3.9	5.2	7.6	2.1	2.8	5.6	3.0	1.7	2.3	2.5
23.....	4.1	4.0	3.7	4.8	7.0	2.8	2.4	11.7	2.4	1.7	2.4	2.5
24.....	4.2	4.0	4.5	4.6	6.5	2.7	2.2	8.3	2.3	1.7	2.2	3.0
25.....	4.3	4.0	4.3	4.4	5.3	2.7	2.1	5.2	2.2	1.7	2.1	2.8
26.....	4.2	4.0	5.4	4.3	6.8	2.6	2.1	4.0	2.1	1.7	2.1	2.7
27.....	4.1	3.9	8.7	4.2	4.5	2.6	2.1	3.3	2.0	1.6	2.0	2.6
28.....	4.3	3.9	8.2	4.1	4.4	2.5	2.1	4.4	2.0	1.6	1.9	2.8
29.....	4.5	.....	7.5	4.0	4.3	2.5	2.0	5.2	2.2	1.6	1.8	15.7
30.....	4.5	.....	5.0	3.9	4.2	5.2	2.1	4.3	2.3	1.6	1.8	17.2
31.....	4.6	.....	8.9	.....	4.0	.....	2.8	3.5	.....	1.6	.....	12.0

4. SURVEY OF TALLAPOOSA RIVER IN ALABAMA.

This survey of a part of Tallapoosa River in Alabama was made in June and July, 1900, under supervision of B. M. Hall, resident Hydrographer, by Field Engineer James R. Hall, levelman and topographer.

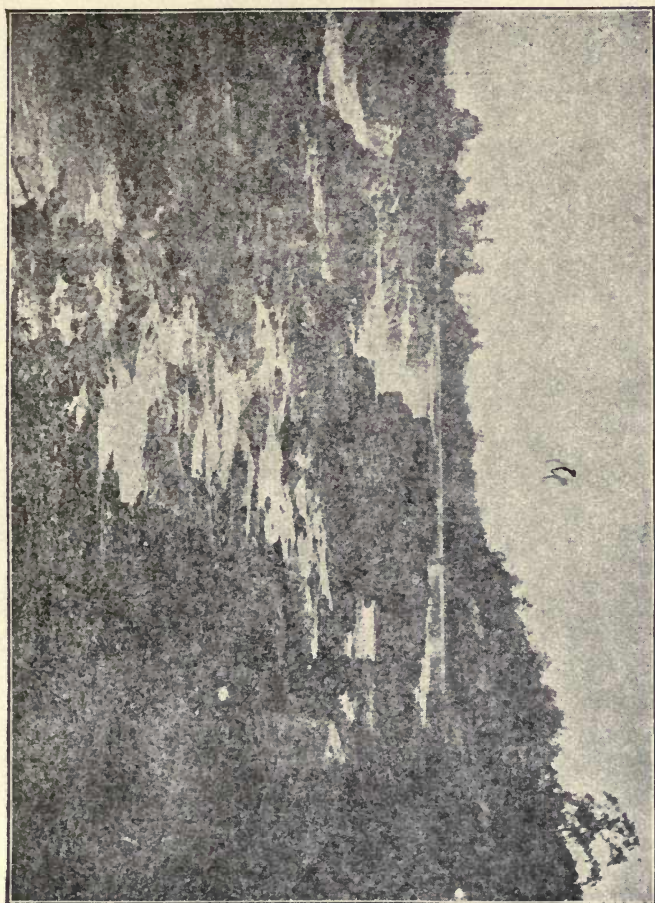
The survey began at the Hydrographic Station on the Tallapoosa River, at Milstead, Ala., and ran up the river 64 miles to head of shoal above Griffin's Ferry. The elevations are sea-level elevations.

DESCRIPTION OF RIVER.

The entire river above Milstead runs on granite bed-rock, and has numerous bluffs along its banks, forming excellent sites for dams.

There are two large developed water powers on the river: The Tallassee Falls plant, and the Montgomery Power Company's plant, both of which are near the lower end of the survey. (*See Plates B and C, opposite.*)

LYLE R. JELLS' Falls on Tulare River.



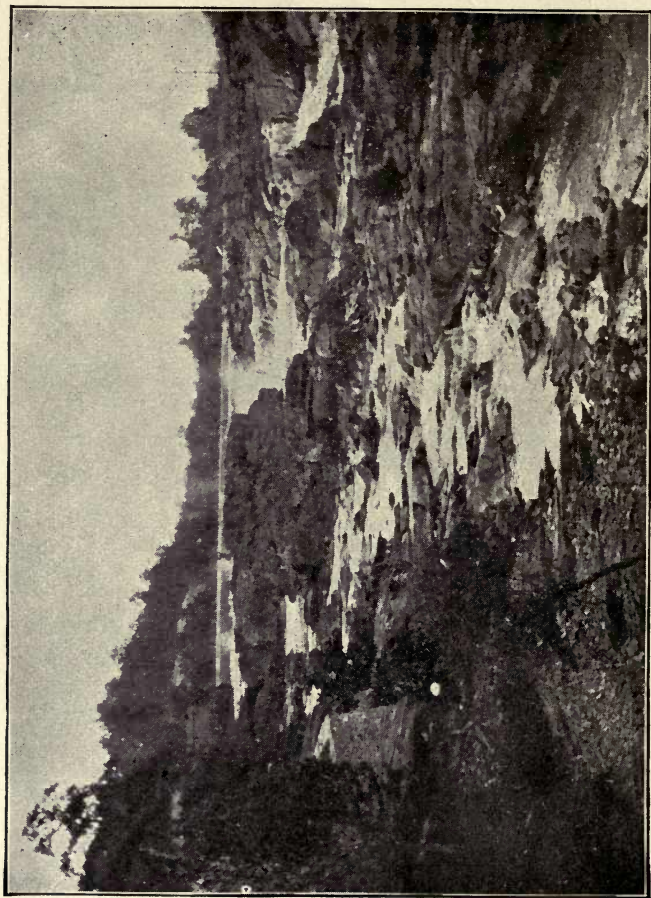


PLATE B. Tallassee Falls on Tallapoosa River.



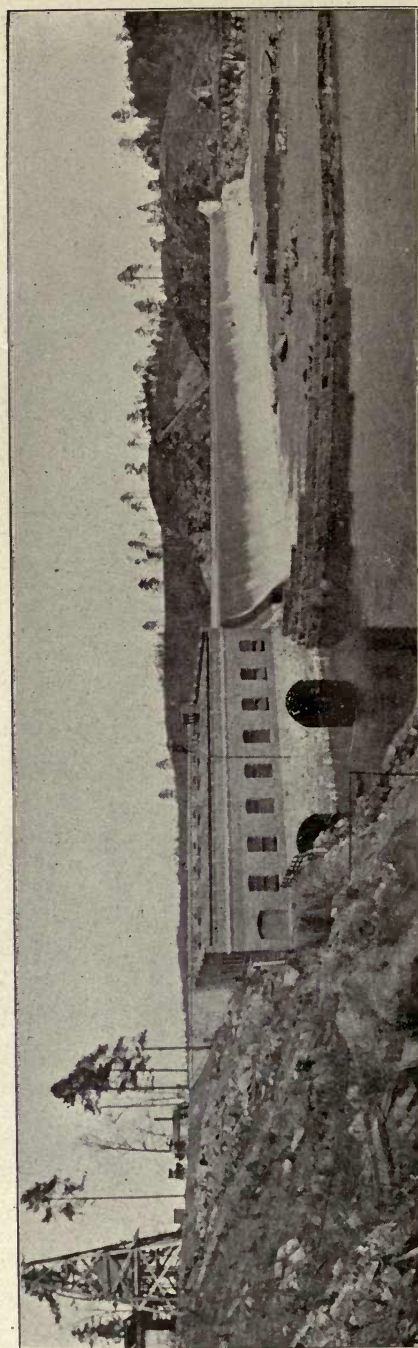


Plate C. Power House and Dam, Montgomery Power Company, on Tallapoosa River, near Tallassee, Ala.

The Tallassee Falls dam and canal, which are six miles above Milstead, utilize a fall of 64 feet, with the whole river. This power and its large cotton manufacturing plant recently completed, is described in the Twentieth Annual Report, U. S. Geological Survey, Part IV, Pages 192-193. This power was capable of realizing 8,900 net H. P. without storage during low water of October, 1901. A break which occurred in the dam on December 29, 1901, has decreased the present available head, but does not stop the machinery.

The Montgomery Power Company dam has a 40-foot dam, nine and a half miles above Milstead. It backs the water six and a half miles up the river, and forms an immense storage basin. This being almost completed in December, 1901, was partly washed out by a great flood December 29, 1901. The water wheels, dynamos, pole line and wiring to Montgomery are all installed, and ready for work as soon as the dam is repaired. The distance to Montgomery is about 27 miles.

With river at stage of lowest water during October, 1901, this plant will develop at the wheels 5,572 net H. P. from the run of the river without drawing on the storage.

The equalizing storage of this dam will add fully 25 per cent. to this power and to the power at Tallassee for continuous running without materially lowering the head at either plant.

The following list of distances and elevations of water and bench marks shows the fall of the river from point to point. The total fall in 56 of the 64 miles surveyed is 364 feet.

Elevations and bench marks along Tallapoosa River from Milstead, Ala., to Griffin Shoals.

Distance from Milstead.	Description or location.	Bench mark elevation above sea level.	Elevation above sea level.
6.0	River surface of tailwater at Tallassee mills.....		206.3
6.2	Water above crest of Tallassee dam.....		269.9
8.5	Upper end of Tallassee Pond.....		269.9
9.5	River below Montgomery Power Company's dam.....		295.25
9.5	Crest of Montgomery Power Company's dam.....		335.25
15.7	Upper end of Montgomery Power Co.'s Pond.....		335.25
16.5	Water at Double Bridge Ferry		351.46
16.8	Water at mouth of Wind Creek		352.45
16.8	Bench mark No. 7, bunch of mulberry trees at the mouth of Wind Creek	357.85	
17.8	Bench mark, No. 22, crooked willow on small branch at north end of Taylor's field.....	363.30	
17.8	Water at bench mark No. 22.....		356.18
18.5	Water opposite mouth of Kowaliga Creek.....		357.16
18.75	Bench mark No. 33, mulberry 100 feet above old Baker field	371.73	
18.75	Water at bench mark No. 33.....		359.75
19.4	Bench mark No. 42, willow at Garnetts Ford.....	364.60	
19.4	Water at Garnetts Ford		360.55
19.7	Bench mark No. 46, pine at mouth of High Falls Branch	373.98	
19.7	Water at "blue hole" at mouth of High Falls Branch		362.40
20.1	Water at "blue hole" at foot of Long Branch shoals		362.40
21.0	Bench mark No. 62, mulberry, 300 yards above mouth of Long Branch	382.45	
21.0	Water at bench mark No. 62, top of Long branch shoals		367.23
21.3	Bench mark No. 70, white hickory at McCarty's Ferry, mouth of Blue Creek	376.64	
21.3	Water at McCarty's Ferry, mouth of Blue Creek.....		367.80
23.0	Top of shoal opposite mouth of Peru Branch.....		372.55
23.8	Water at mouth of Gold Mine Branch		345.17
23.8	Bench mark No. 100, mulberry at mouth of Gold Mine Branch	386.00	
24.4	Bench mark No. 110, water oak at Robinson's Ferry	404.40	
24.4	Water at Robinson's Ferry		380.20
25.6	Water at top of Upper Robinson Shoals.....		389.10
25.6	Bench mark No. 124, small sycamore at mouth of small branch	395.10	
27.7	Water at mouth of small branch in Pace's field....		390.90
28.7	Bench mark No. 140, water oak at foot of Hardy Shoals, in Pace's field	414.30	
29.5	Bench mark No. 150, dead stump 100 feet below the mouth of Big Sandy Creek.....	398.08	
29.5	Water at mouth of Big Sandy Creek.....		
30.0	Bench mark No. 165, big red oak at Young's Ferry..	413.50	
30.0	Water at Young's Ferry		394.00
31.0	Water at Cherokee Bluff		394.60
31.2	Bench mark No. 175, big walnut 200 yards above Monowa Creek	416.75	
34.0	Bench mark No. 180, 16-inch pine tree at third bar of Seago Shoals	424.72	
34.0	Water at third bar of Seago Shoals, opposite bench mark No. 180		349.92
35.8	Bench mark No. 190, large white oak at east landing at Walkers Ferry	436.90	
35.8	Water at Walkers Ferry		429.65
37.0	Bench mark No. 210, leaning white oak at mouth of small branch at upper end of Upshaw place.....	438.60	
37.4	Water at bench mark No. 210		432.00
37.6	Water at top of fish trap		431.47
38.3	Bench mark No. 215, 16-inch white oak on small branch at upper end of Locke's old field.....	448.90	

Distance from Millstead.	Description or location.	Bench mark elevation above sea level.	Elevation above sea level.
38.3	Water at bench mark No. 215.....		438.00
39.3	Water under Central railroad bridge at Sturdevant, Alabama		444.25
39.3	Bench mark on top of rail over first pier of the east end of Central Railroad bridge	505.90	
41.2	Bench mark No. 210, large water oak at east landing of Dennis Ferry	457.15	
41.2	Water at Dennis Ferry		445.85
42.2	Water at mouth of branch on left bank of river.....		448.20
45.3	Water 600 feet below mouth of Hillabee Creek.....		472.60
48.3	Bench mark No. 310, water oak at east landing of Welch's Ferry	504.15	
48.3	Water at Welch's Ferry		492.30
50.0	Bench mark No. 330, beech 150 feet above mouth of Freeman's Branch	526.62	
50.0	Water 150 feet above mouth of Freeman's Branch.....		521.04
52.0	Water at Waleys Ferry		529.48
52.0	Bench mark No. 340, birch at Waleys Ferry.....	539.38	
55.4	Bench mark No. 350, 10-inch birch at Millers Ferry..	552.16	
55.4	Water at Millers Ferry		544.00
60.8	Water at Griffins Ferry		557.10
60.8	Bench mark No. 380, double ash tree on left bank at Griffins Ferry	564.76	
62.0	Bench mark No. 390, 12-inch birch at head of Griffins Shoals	573.87	
62.0	Water at head of Griffins Shoals		570.30

Surveys have been made for a large dam, 35 or 40 feet in height, at or near Double Bridge Ferry, to back the water beyond Robinson's Ferry, a distance of about 8 miles up the river. There is an excellent site for a dam, and the project is entirely feasible. The horse power in proportion to head would be the same as that available at the Montgomery Power Company's dam.

From the mouth of Big Sandy Creek to a point one mile above Griffin's Ferry, a distance of 32 miles, the fall of the Tallapoosa River is 176.5 feet. Nearly all of this fall can be utilized for power by developments similar to those which have been made, and proposed below. A study of the profile and of the above table of distances and elevations will give the distribution of the fall, showing the distance to which dams of certain height will back the water, at the various shoals, but the question of the best power sites, and the proper plan of development, height and location of dams, etc., for any point will depend on the special conditions favorable or unfavorable for dams and canals, the width of river bed, or flooded areas above, and the value of farming lands which

may be flooded. All of which can be determined only by special investigation and surveys. It will be safe, however, to assume that a practicable site for a dam 40 feet high or under, can be found in the vicinity of any location which may be selected, and the power obtainable can be estimated by using the volume of water, or its equivalent net horse power per foot of fall, and the proposed head to be developed.

The water supply or discharge of Tallapoosa River at different points may be closely approximated from the foregoing records of Milstead, Susanna, and Sturdevant Hydrographic Stations, and also at Dadeville, and Alexander City stations, on the tributaries.

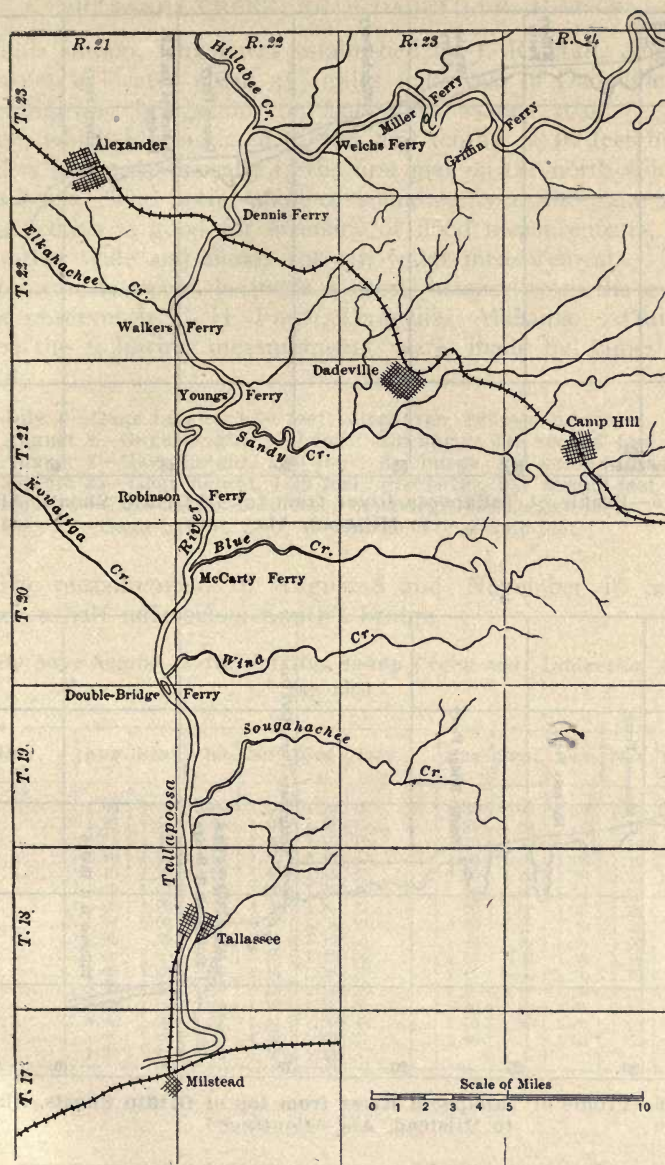


Fig. 4—Map of Tallapoosa River from top of Griffin Shoals, Ala., to Milstead, Ala.

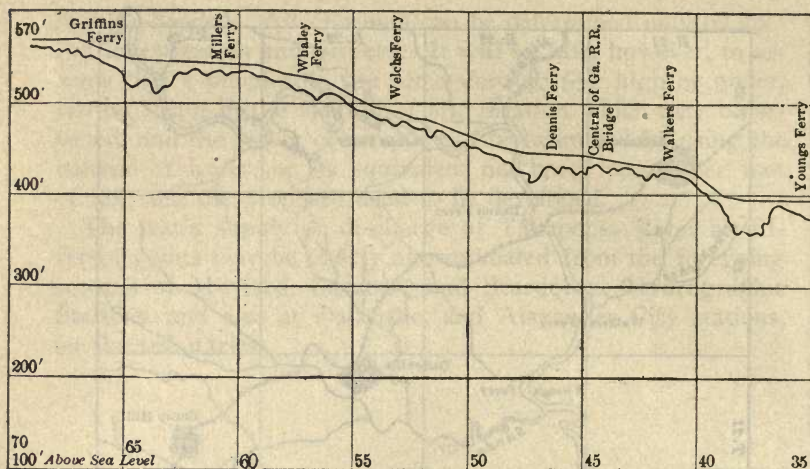


Fig. 5—Profile of Tallapoosa River from top of Griffin Shoals, Ala., to Milstead, Ala.

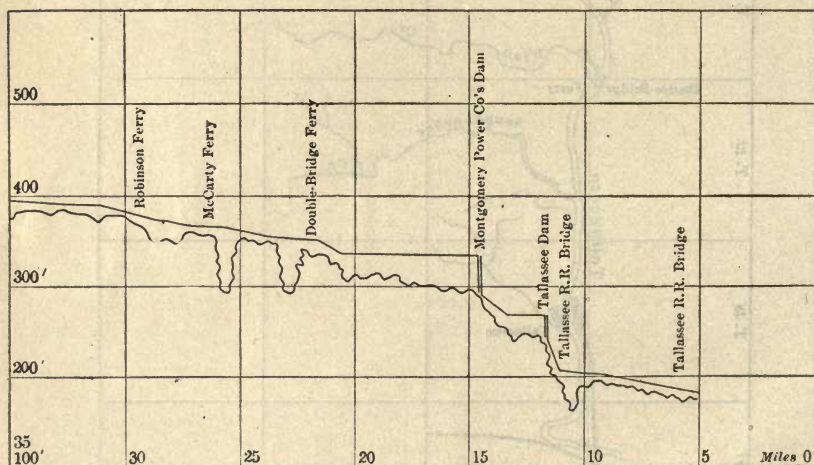


Fig. 6—Profile of Tallapoosa River from top of Griffin Shoals, Ala., to Milstead, Ala.—Continued.

5. BIG SANDY CREEK, NEAR DADEVILLE, ALABAMA.

This station, which was established by J. R. Hall, August 2, 1900, is located about $4\frac{1}{2}$ miles southwest of Dadeville, at the highway bridge on the Dadeville-Susanna road. The gage, which is graduated to feet and tenths, is 16 feet high, and is fastened vertically to the first pier on the north side of the creek. The initial point of sounding is at the gage rod. The section is good for ordinary or flood measurements, but is rather wide and shoaly for low-water measurements. The latter can, however, be made a short distance from the gage. The observer is T. H. Finch, Dadeville, Alabama. During 1900 the following measurements were made by James R. Hall:

July 6—Gage height, 1.20 feet; discharge, 260 second-feet.
 August 8—Gage height, 1.00 foot; discharge, 110 second feet.
 August 8—Gage height, 1.00 foot; discharge, 116 second-feet.
 August 25—Gage height, 1.35 feet; discharge, 281 second-feet.
 Nov. 16—Gage height, 1.10 feet; discharge, 155 second-feet.
 Dec. 31—Gage height, 2.00; discharge, 870 second-feet.

The measurements of August 8 and November 16 were made a half mile below Smith's bridge.

Daily gage height, in feet, of Big Sandy Creek near Dadeville, Ala., for 1900.

Day.	Aug.	Sept.	Oct.	Nov.	Dec.	Day.	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	1.00	1.10	0.95	1.00	1.10	17.....	1.80	3.90	1.10	1.05	1.45
2.....	1.20	1.10	.90	1.30	1.15	18.....	1.20	1.50	1.00	1.10	1.30
3.....	1.10	1.40	.90	2.00	1.25	19.....	1.10	1.10	1.05	1.10	2.40
4.....	1.10	1.30	.90	1.80	1.40	20.....	1.00	1.65	1.05	1.10	4.50
5.....	1.10	1.20	3.50	1.40	1.25	21.....	1.00	1.00	1.00	1.10	3.50
6.....	1.05	1.05	1.80	1.20	1.30	22.....	.90	1.00	1.50	1.30	1.70
7.....	1.05	1.00	1.25	1.20	1.25	23.....	.90	1.00	1.45	1.25	1.50
8.....	1.00	1.00	1.20	1.20	1.20	24.....	1.70	1.00	1.40	1.20	1.40
9.....	1.05	.95	1.10	1.15	1.15	25.....	1.40	1.00	1.20	1.50	1.40
10.....	1.00	2.00	1.15	1.15	1.10	26.....	1.60	1.00	1.15	1.90	1.35
11.....	1.00	1.80	1.10	1.15	1.10	27.....	1.15	1.05	1.10	1.80	1.35
12.....	9.05	1.40	1.20	1.15	1.10	28.....	1.10	1.05	1.05	1.20	1.35
13.....	9.00	1.20	1.30	1.10	1.10	29.....	1.00	1.00	1.05	1.15	1.30
14.....	9.00	1.20	1.15	1.10	2.20	30.....	1.00	.90	1.00	1.10	1.75
15.....	1.80	2.00	1.10	1.10	1.80	31.....	1.80	.....	1.05	.....	2.00
16.....	1.00	2.20	1.05	1.10	1.45						

Daily gage height, in feet, of Big Sandy Creek near Dadeville, Ala., for 1901.

Day.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	1.90	1.35	1.40	4.40	1.40	1.40	1.30	1.10	1.30	4.20	.85	.90
2.....	1.90	1.35	1.40	7.40	1.40	1.40	1.25	1.10	1.30	4.00	.85	.90
3.....	1.95	3.10	1.35	2.70	1.45	4.00	1.20	1.00	1.20	3.00	.85	1.40
4.....	1.70	6.00	1.35	2.00	1.35	5.60	1.20	1.05	1.10	3.50	.85	1.40
5.....	1.60	1.90	1.35	1.80	1.35	1.90	1.40	1.10	1.10	2.00	.85	1.40
6.....	1.50	1.75	1.40	1.60	1.35	3.50	1.50	1.05	1.10	1.80	.90	1.30
7.....	1.45	1.55	1.35	1.50	1.40	2.40	1.40	1.30	1.00	1.80	.90	1.10
8.....	1.40	2.10	1.35	1.50	1.35	1.90	1.25	1.20	1.00	1.50	1.00	1.00
9.....	1.40	3.50	1.40	1.50	1.35	1.50	1.20	1.10	1.00	1.40	1.00	1.10
10.....	1.40	2.20	1.45	1.50	1.30	1.60	1.20	1.10	.90	1.20	1.00	1.00
11.....	1.90	2.00	1.40	1.50	1.30	1.70	1.10	1.10	.90	1.20	1.00	1.00
12.....	1.70	1.70	1.35	1.55	1.35	2.00	1.10	1.20	.85	1.00	.90	1.00
13.....	2.50	1.50	1.35	1.65	1.35	1.80	1.10	1.15	.80	1.90	1.00	1.10
14.....	1.90	1.50	1.35	1.65	1.50	1.90	1.10	1.10	1.40	1.90	1.00	4.40
15.....	1.60	1.50	1.30	1.60	1.50	1.15	1.80	1.00	1.40	1.80	1.00	3.80
16.....	1.55	1.45	1.30	1.50	1.45	1.70	1.50	5.00	1.80	1.80	1.00	3.00
17.....	2.00	1.45	1.30	1.50	1.25	1.50	1.50	1.80	2.00	1.70	1.00	2.90
18.....	2.00	1.45	1.35	1.45	1.40	1.50	1.50	1.80	1.80	1.70	.90	2.50
19.....	1.60	1.50	1.35	6.00	1.40	1.45	1.30	1.40	1.80	1.70	.90	2.40
20.....	1.50	1.50	1.80	2.50	1.70	1.45	1.20	1.30	1.70	1.70	.80	2.40
21.....	1.50	1.45	1.60	2.40	7.00	1.40	1.15	1.20	1.40	1.60	.80	2.00
22.....	1.45	1.40	1.40	2.10	3.40	1.35	1.15	4.50	1.30	1.60	1.00	2.00
23.....	1.45	1.40	1.40	1.80	1.80	1.4	1.15	1.50	1.30	1.00	1.00	1.90
24.....	1.45	1.50	2.20	1.80	1.70	1.40	1.10	1.50	1.20	1.00	.85	1.80
25.....	1.50	1.50	2.10	1.70	1.50	1.35	1.10	1.40	1.20	.90	.85	1.50
26.....	1.55	1.45	1.70	1.60	2.70	1.30	1.10	1.40	1.10	.90	.80	3.00
27.....	1.45	1.45	1.70	1.45	1.80	1.30	1.15	1.20	1.00	*.70	.90	3.00
28.....	1.40	1.45	1.40	1.45	1.50	1.20	1.20	2.00	1.00	*.60	.90	21.00
29.....	1.40	.....	1.40	1.45	1.50	1.15	1.15	1.50	1.80	*.70	.90	16.00
30.....	1.40	.....	2.30	1.45	1.45	1.20	1.10	1.40	1.80	*.70	.90	8.00
31.....	1.40	.....	13.10	.....	1.40	.....	1.10	1.40	.....	.80	.....	4.00

*Water was being held back by dams above in the morning when readings were made; 0.8 is assumed as minimum for October.

Rating table for Big Sandy Creek at Dadeville, Ala., for 1900 and 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
0.8	67	4.4	1,868	8.0	3,740	11.6	5,612
0.9	85	4.5	1,920	8.1	3,792	11.7	5,664
1.0	115	4.6	1,972	8.2	3,844	11.8	5,716
1.1	152	4.7	2,024	8.3	3,896	11.9	5,768
1.2	204	4.8	2,076	8.4	3,948	12.0	5,820
1.3	256	4.9	2,128	8.5	4,000	12.1	5,872
1.4	308	5.0	2,180	8.6	4,052	12.2	5,924
1.5	360	5.1	2,232	8.7	4,104	12.3	5,976
1.6	412	5.2	2,284	8.8	4,156	12.4	6,028
1.7	464	5.3	2,336	8.9	4,208	12.5	6,080
1.8	516	5.4	2,388	9.0	4,260	12.6	6,132
1.9	568	5.5	2,440	9.1	4,312	12.7	6,184
2.0	620	5.6	2,492	9.2	4,364	12.8	6,236
2.1	672	5.7	2,544	9.3	4,416	12.9	6,288
2.2	724	5.8	2,596	9.4	4,468	13.0	6,340
2.3	776	5.9	2,648	9.5	4,520	13.1	6,392
2.4	828	6.0	2,700	9.6	4,572	13.2	6,444
2.5	880	6.1	2,752	9.7	4,624	13.3	6,496
2.6	932	6.2	2,804	9.8	4,676	13.4	6,548
2.7	984	6.3	2,856	9.9	4,728	13.5	6,600
2.8	1,036	6.4	2,908	10.0	4,780	13.6	6,652
2.9	1,088	6.5	2,960	10.1	4,832	13.7	6,704
3.0	1,140	6.6	3,012	10.2	4,884	13.8	6,756
3.1	1,192	6.7	3,064	10.3	4,936	13.9	6,808
3.2	1,244	6.8	3,116	10.4	4,988	14.0	6,860
3.3	1,296	6.9	3,168	10.5	5,040	14.1	6,912
3.4	1,348	7.0	3,220	10.6	5,092	14.2	6,964
3.5	1,400	7.1	3,272	10.7	5,144	14.3	7,016
3.6	1,452	7.2	3,324	10.8	5,196	14.4	7,068
3.7	1,504	7.3	3,376	10.9	5,248	14.5	7,120
3.8	1,556	7.4	3,428	11.0	5,300	14.6	7,172
3.9	1,608	7.5	3,480	11.1	5,352	14.7	7,224
4.0	1,660	7.6	3,532	11.2	5,404	14.8	7,276
4.1	1,712	7.7	3,584	11.3	5,456	14.9	7,328
4.2	1,764	7.8	3,636	11.4	5,508	15.0	7,380
4.3	1,816	7.9	3,688	11.5	5,560		

NOTE.—This table applied to the foregoing "Daily gage heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.

Estimated monthly discharge of Big Sandy Creek near Dadeville, Ala.

[Drainage area, 195 square miles.]

Month.	Discharge in second-feet.			Total in acre-ft.	Run-off.	
	Maxi-mum.	Mini-mum.	Mean.		Depth in inches.	Second-ft. per sq. mile.
1900.						
August	655	80	207	12,728	1.22	1.06
September	3,150	80	355	21,124	2.03	1.82
October	2,670	80	264	16,233	1.56	1.35
November	870	110	261	15,531	1.50	1.34
December	3,870	150	560	34,433	3.31	2.87

Estimated monthly discharge of Big Sandy Creek near Dadeville, Ala.

[Drainage area, 195 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maxi-mum.	Mini-mum.	Mean.	Depth in inches.	Second-ft. per sq. mile.
1901.					
January	880	308	425	2.51	2.18
February	2,700	282	545	2.90	2.78
March	6,392	256	552	3.26	2.83
April	3,428	334	689	3.94	3.53
May	3,220	230	480	2.84	2.46
June	2,492	178	523	2.99	2.68
July	516	152	227	1.34	1.16
August	2,180	115	369	2.18	1.89
September	620	67	257	1.47	1.32
October	1,764	*45	462	2.73	2.37
November	115	67	92	.52	.47
December	10,500	85	1,265	7.48	6.49
The year	10,500	*45	490	34.16	2.51

*See foot note under gage heights for 1901.

Minimum monthly discharge of Big Sandy Creek at Dadeville, Ala., with corresponding net horsepower per foot of fall on a water wheel realizing 80 per cent of the theoretical power.

[Drainage area, 195 square miles.]

	1900			1901		
	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.
January				308	28	7
February				282	26	2
March				256	23	3
April				334	30	5
May				230	21	1
June				178	16	2
July				152	14	9
August	80	7	4	115	10	2
September	80	7	1	67	6	1
October	80	7	3	*45	*4	1
November	110	10	1	67	6	3
December	150	14	5	85	8	2

*NOTE.—To find the minimum net horse power available at a shoal on this stream, near this station, for any month, multiply the total fall of the shoal by the "Net H. P. per foot of fall" in this table for that month.

*See foot note under gage heights for 1901.

A survey made in July, 1900, of Big Sandy Creek from its mouth to the new bridge near Dadeville, Ala., showed a total fall of 157 feet in a distance of 65,000 feet, or about 12 miles.

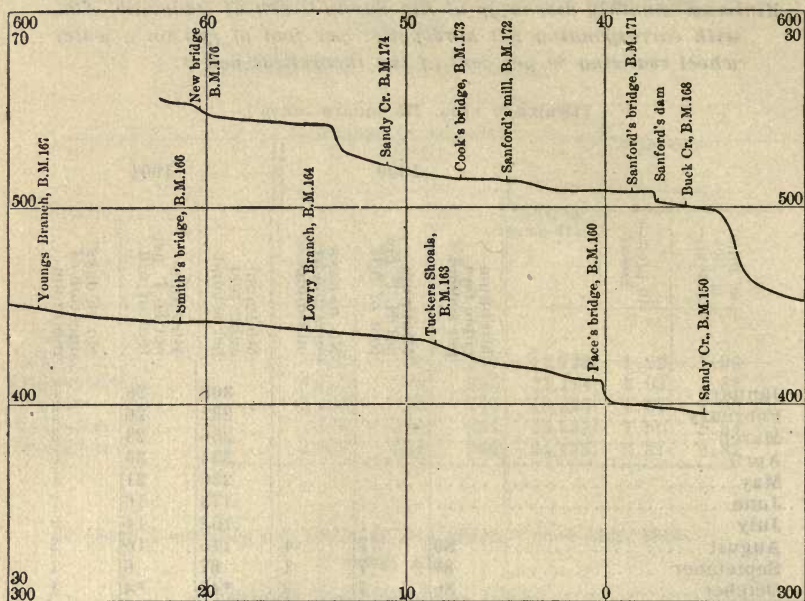


Fig. 7.—Profile of Big Sandy Creek from mouth to new bridge near Dadeville, Ala.

*NOTE.—The numbers 0, 10...70, represent thousand feet stations.

The profile resulting from the survey is reproduced in Fig. 7. The following list of distances and elevations of water and bench marks shows the fall of the creek from point to point.

Elevations and bench marks along Big Sandy Creek between its mouth and the new bridge near Dadeville, Ala.

Distance above mouth.	Description or location.	Bench mark elevation above sea level.	Elevation above sea level.
0	Bench mark No. 150, dead stump at mouth of creek..	398.08	.....
0	Water at mouth of Big Sandy Creek.....		393.80
5,000	Water below Pace's dam		402.00
5,000	Water above Pace's dam		412.10
5,500	Bench mark No. 160, big pine on north side, 175 feet above Pace's bridge	422.30	.....
8,000	Creek surface		416.00
10,000	At point of Ivy Bend		419.00
11,700	Bench mark No. 162, large walnut at Tucker's house	503.85	.....
13,500	Bench mark No. 163, small oak at Tucker's fish trap	432.85	.....
13,500	Water above Tucker's fish trap		430.00
20,000	Bench mark No. 164, large sycamore at mouth of Lowry branch	445.20	.....
20,000	Water at mouth of Lowry branch		436.10
26,500	Bench mark No. 166, oak post at north end of Smith's bridge	463.95	.....
26,000	Water at Smith's bridge		441.70
26,500	Zero of U. S. G. S. gage at Dadeville	440.50	.....
33,500	Bench mark No. 167, wahoo tree at mouth of Young branch	559.58	.....
33,500	Water at mouth of Young branch		446.50
35,360	Water at Barnes basin		452.30
37,330	Water at foot of Black Shoals.....		465.00
39,300	Water at top of Black Shoals.....		496.30
41,100	Water at mouth of Buck Creek.....		497.30
41,100	Bench mark No. 168, small double oak at mouth of Buck Creek	503.65	.....
41,900	Eddy water below Sanford's dam		500.10
42,550	Bench mark No. 169, hickory at Sanfords' mill.....	522.10	.....
42,550	Floor of Sanford's mill	514.00	.....
43,770	Water at Sanford's bridge above dam.....		506.70
45,580	Water at head of Sanford Pond		506.70
50,000	Water at second shoal above Sanford Pond		512.50
52,340	Bench mark No. 173, large white oak near north end of Cook's bridge	539.35	.....
52,340	Water at Cook's bridge		513.80
56,120	Water opposite mouth of Chattasofka Creek.....		520.60
56,120	Bench mark, 16-inch water oak on west bank of Chattasofka Creek, 50 feet above mouth.....	527.20	.....
58,620	Water at top of old factory shoal		540.15
65,350	Water at new bridge		550.80
65,350	Bench mark on upstream end of sill on west end of new bridge	562.30	.....
65,350	Bench mark No. 176, 6-inch maple at new bridge....	563.00	.....

Water supply on this creek is shown by the foregoing records of Dadeville Hydrographic Station at Smith's Bridge.

The best shoal on this creek is the Sanford and Black Shoal, near Dadeville, which has a fall of 85.8 feet, in a distance of 5.2 miles. With a dam 54 feet high, and a canal 1,370 feet long, a practical working head of 80 feet can be developed, having 1 foot extra for grade of canal, and 4 feet extra for storage at top of dam. The foregoing record shows that from

August 1, 1900, to December 31, 1901, covering a record of 515 days, there were only 37 days in which the flow at Smith's Bridge was less than 115 cubic feet per second. It is, therefore, plain that during the last two years such a plant would have realized, for 90 per cent. of the time, not less than 800 net horse power continuously, 24 hours per day; and that by running 11 hours per day, 6 days per week, and storing the water during the time that the wheels are standing, there would have been 2,000 H. P. or more for use during factory hours, for 90 per cent. of the time during the last two years. By applying the rating table to the gage heights, and finding the discharge for each individual day, the exact power obtainable can be calculated, due allowance being made for the storage capacity, and equalizing effect of the dam.

Of course, this 85 foot fall can be developed in other ways. A low dam, and long canal can be used, or two separate powers can be developed.

6. HILLABEE CREEK, NEAR ALEXANDER CITY, ALABAMA.

This station, which was established August 20, 1900, by J. R. Hall, is located $6\frac{1}{2}$ miles northeast of Alexander City, on the road leading from that town to Newsite. The gage, which is graduated to feet and tenths, and is placed vertically, is in two sections, the short section, which reads from 0 to 5.50 feet, being fastened to a post in the edge of the water on the north bank 20 feet from the upstream side of the bridge, the long section, which reads from 5.50 feet to 16 feet, being fastened to the upstream end of the first pier on the north bank, and arranged so that when water rises above the short section the readings are made from the long one, both sections being easily read from the north approach to the bridge. The initial point of sounding is on the south side of the first pier on the north bank. The gage is referred to a bench mark at the top of a chord on the downstream side of the bridge at the second pier from the north bank, and is 27.6 feet above the zero of the gage. The bridge is in three spans, having a total length of 276 feet, with a north approach of 116 feet and a south approach of 124 feet, making a total, over all, of 516 feet. The observer is J. H. Chisholm, a farmer, postoffice address Alexander City, Ala. During 1900 the following measurements were made by James R. Hall:

August 29: Gage height, 1.40 feet; discharge 184 second-feet.
November 28: Gage height, 2 feet; discharge, 390 second-feet.

Daily gage height of Hillabee Creek at Alexander City, Ala., for 1900.

Day.	Aug.	Sept.	Oct.	Nov.	Dec	Day.	Aug.	Sept.	Oct.	Nov.	Dec
1.....		2.30	1.30	1.60	1.90	17.....		2.60	1.30	1.50	2.70
2.....		2.30	1.10	2.60	1.90	18.....		2.20	1.30	1.40	2.80
3.....		1.60	1.10	6.80	1.80	19.....		1.60	1.20	1.50	3.00
4.....		1.40	1.10	3.20	1.90	20.....		1.50	1.20	1.60	2.90
5.....		1.30	3.20	2.20	1.80	21.....		1.50	1.20	1.70	6.00
6.....		1.20	2.00	1.80	1.90	22.....		1.40	1.90	2.10	4.00
7.....		1.20	2.80	1.70	1.80	23.....		1.20	5.90	1.90	3.00
8.....		1.10	2.60	1.70	1.70	24.....		1.30	2.90	1.90	2.90
9.....		1.10	2.40	1.80	1.70	25.....		1.40	2.10	5.10	2.90
10.....		1.20	2.30	1.70	1.70	26.....		1.30	1.90	2.90	2.80
11.....		1.10	2.30	1.70	1.70	27.....		1.40	1.80	2.40	2.60
12.....		1.10	1.80	1.70	1.70	28.....		1.30	1.70	2.00	2.50
13.....		1.10	1.60	1.70	1.80	29.....	1.40	1.40	1.60	1.90	2.50
14.....		1.10	1.40	1.70	3.80	30.....	1.30	1.30	1.50	1.90	5.80
15.....		8.10	1.40	1.70	2.90	31.....	1.80	.....	1.50	.....	5.70
16.....		5.00	1.20	1.60	2.80						

Daily gage height of Hillabee Creek at Alexander City, Ala., for 1901.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	5.00	2.40	2.30	5.20	2.50	2.50	2.50	1.80	2.60	1.20	1.00	1.00
2.....	4.90	2.40	2.30	4.40	2.50	2.40	2.50	1.40	2.00	1.20	1.00	1.00
3.....	4.90	4.60	2.40	4.80	2.50	3.00	2.40	1.40	1.40	1.10	1.00	2.00
4.....	4.70	9.40	2.40	3.10	2.40	2.50	2.30	1.20	1.20	1.10	1.00	1.60
5.....	3.90	6.00	2.30	2.90	2.40	2.50	2.00	1.10	1.10	1.10	1.30	1.40
6.....	3.60	4.10	2.20	2.80	2.40	2.60	1.80	1.10	1.10	1.20	1.10	1.40
7.....	3.60	3.60	2.10	2.70	2.40	2.50	2.90	1.10	1.10	1.40	1.10	1.20
8.....	3.40	3.10	2.10	2.60	2.40	2.50	2.10	1.00	1.10	1.20	1.00	1.20
9.....	2.60	3.60	2.10	2.60	2.30	2.40	1.80	1.20	1.10	1.20	1.00	1.20
10.....	2.50	3.00	2.40	2.50	2.30	2.40	1.80	1.20	1.10	1.20	1.00	1.90
11.....	8.00	2.90	2.50	2.50	2.30	2.30	1.70	1.10	1.00	1.60	1.00	1.50
12.....	7.60	2.90	2.30	2.40	2.20	2.00	1.60	1.10	1.00	2.00	1.00	1.40
13.....	7.00	2.80	2.20	3.10	2.50	2.10	1.50	1.20	1.20	2.90	1.00	1.40
14.....	5.90	3.00	2.20	2.90	2.30	2.00	1.40	1.60	2.50	1.60	1.00	2.00
15.....	4.50	3.10	2.30	2.80	2.50	2.00	1.30	2.10	2.40	1.40	1.00	3.00
16.....	4.30	2.60	2.40	2.70	2.20	1.90	1.40	4.40	2.40	1.20	1.00	3.00
17.....	4.00	2.60	2.20	2.60	2.20	2.20	1.30	2.90	2.00	1.00	1.00	2.80
18.....	3.50	2.40	2.20	2.60	2.10	1.90	3.40	2.00	1.80	1.00	1.00	2.0
19.....	3.40	2.60	2.10	10.00	2.10	1.80	2.20	2.00	1.60	1.00	1.30	2.60
20.....	3.00	2.70	2.10	3.20	2.90	1.80	1.80	4.00	1.40	1.00	1.30	2.00
21.....	2.90	2.60	3.00	3.10	3.80	1.70	2.00	4.10	1.20	1.00	1.30	1.50
22.....	2.90	2.40	2.40	3.00	2.90	1.70	1.90	3.40	1.40	1.00	1.30	1.50
23.....	2.80	2.60	2.30	2.90	2.50	1.60	1.80	3.10	1.20	1.00	1.30	1.50
24.....	2.60	2.60	2.80	2.80	2.60	1.60	1.80	2.90	1.10	1.00	1.30	1.60
25.....	2.50	2.50	2.70	2.70	2.40	1.70	1.70	2.20	1.10	1.00	1.20	1.60
26.....	2.60	2.40	3.50	2.60	3.90	1.70	1.70	2.28	1.20	1.00	1.20	1.70
27.....	2.60	2.40	3.00	2.50	2.80	1.80	1.40	2.10	2.10	1.00	1.10	1.70
28.....	2.50	2.40	2.70	2.50	2.60	1.80	1.60	3.80	1.60	1.00	1.10	1.80
29.....	2.40	.....	2.60	2.50	2.50	1.70	1.40	3.60	1.40	1.00	1.10	11.70
30.....	2.40	.....	2.70	2.50	2.30	2.60	1.40	3.40	1.20	1.00	1.10	4.90
31.....	2.40	.....	5.20	.....	2.90	....	2.00	3.00	.....	1.00	.....	3.90

Rating table for Hillabee Creek at Alexander City, Ala., for years 1900 and 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
<i>Feet.</i>	<i>Second Ft.</i>	<i>Feet.</i>	<i>Second Feet.</i>	<i>Feet.</i>	<i>Second Ft.</i>
1.0	138	2.4	566	3.8	1,182
1.1	146	2.5	610	3.9	1,226
1.2	156	2.6	564	4.0	1,270
1.3	169	2.7	698	4.1	1,314
1.4	184	2.8	742	4.2	1,358
1.5	204	2.9	786	4.3	1,402
1.6	230	3.0	830	4.4	1,446
1.7	263	3.1	874	4.5	1,490
1.8	303	3.2	918	4.6	1,534
1.9	346	3.3	962	4.7	1,578
2.0	390	3.4	1,006	4.8	1,622
2.1	434	3.5	1,050	4.9	1,666
2.2	478	3.6	1,094	5.0	1,710
2.3	522	3.7	1,138		

NOTE.—This table applied to the foregoing "Daily Gage Heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.

Estimated monthly discharge of Hillabee Creek near Alexander City, Ala.

[Drainage area, 214 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maxi-mum.	Mini-mum.	Mean.	Depth in inches.	Second-feet per square mile.
1900.					
September	3,074	146	370	1.93	1.73
October	2,106	146	387	2.09	1.81
November	2,502	184	471	2.45	2.20
December	2,150	263	716	3.86	3.35
1901.					
January	3,030	566	1,198	6.46	5.60
February	3,646	566	920	4.48	4.30
March	1,798	434	617	3.32	2.88
April	3,910	566	911	4.75	4.26
May	1,226	434	624	3.37	2.92
June	830	230	439	2.29	2.05
July	1,006	169	357	1.93	1.67
August	1,446	138	535	2.89	2.50
September	654	138	249	1.29	1.16
October	786	138	181	.98	.85
November	169	138	148	.77	.69
December	4,350	138	526	2.84	2.46
The year	4,350	138	559	35.37	2.61

Minimum monthly discharge of Hillabee Creek at Alexander City, Ala., with corresponding net horsepower per foot of fall on a water wheel realizing 80 per cent of the theoretical power.

[Drainage area, 214 square miles.]

	1900			1901		
	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.
January				566	51	3
February				566	51	7
March				434	40	5
April				566	51	1
May				434	40	2
June				230	21	2
July				169	15	2
August	169	15	1	138	13	1
September	146	13	6	138	13	2
October	146	13	3	138	13	15
November	184	17	1	138	13	15
December	263	24	5	138	13	2

NOTE.—To find the minimum net horse power available at a shoal on this stream, near this station, for any month, multiply the total fall of the shoal by the "Net H. P. per foot of fall" in this table for that month.

7. ALABAMA TRIBUTARIES OF THE TALLAPOOSA RIVER, FROM MILSTEAD UP.

From which side.	Name of Stream.	Point on stream.	Drainage area, sq. miles.	Estimated discharge cu. ft. per sec. low water 1900-1901.	Net H.P. per ft. of fall on 80 per cent. turbine.
Left..	Uphapee Creek.....	Mouth of Creek.....	450	45	4.1
Left..	Uphapee Creek.....	Chehaw, Ala.....	360	40	3.6
Left..	Sougahatchee Creek.....	Mouth of Creek.....	240	48	4.3
Right	Cedar Creek.....	Mouth of Creek.....	55	14	1.3
Left..	Wind Creek.....	Mouth of Creek.....	25	8	0.7
Right	Kowaliga Creek.....	Mouth of Creek.....	135	40	3.6
Right	Kowaliga Creek.....	Kowaliga, Ala.....	115	35	3.2
Left..	Blue Creek.....	Mouth of Creek.....	60	20	1.8
Left..	Big Sandy Creek.....	Mouth of Creek.....	200	70	6.3
Left..	Big Sandy Creek.....	Smith's Bridge.....	195	67	6.1
Right	Eikahatchee Creek.....	Mouth of Creek.....	75	37	3.3
Right	Hillabee Creek.....	Mouth of Creek.....	220	141	12.3
Right	Hillabee Creek.....	Chisholme's Bridge...	214	138	12.6
Right	Emuckfaw Creek.....	Mouth of Creek.....	78	46	4.2
Left..	Cohoasanocsa Creek.....	Mouth of Creek.....	70	42	3.8
Left..	High Pine Creek.....	Mouth of Creek.....	82	49	4.4
Right	Hurricane Creek.....	Mouth of Creek.....	14	8	0.7
Left..	Corn House Creek.....	Mouth of Creek.....	72	43	3.9
Right	Crooked Creek.....	Mouth of Creek.....	95	57	5.2
Right	Fox Creek.....	Mouth of Creek.....	37	22	2.0
Left..	Little Tallapoosa River...	Mouth of River.....	590	354	32.2
Left..	Little Tallapoosa River...	Ala.-Ga. State Line..	311	186	16.9
Left..	Tallapoosa River.....	Above Little Tallapoosa River	767	460	41.8
Right	Ketchepedrakee Creek....	Mouth of Creek.....	49	29	2.6
Right	Cane Creek.....	Mouth of Creek.....	55	33	3.0
Right	Muscadine Creek.....	Mouth of Creek.....	36	21	1.9
Right	Tallapoosa River.....	Ala.-Ga. State Line..	302	181	16.4

NOTE.—To find the net horse power available at a shoal on one of the streams near a given point, for low water 1900-1901, multiply the total fall of the shoal by the "Net H. P. per foot of fall" in this table.

All of these tributaries to the Tallapoosa River are in the Crystalline region, and are very precipitous streams, having fine shoals all along their courses.

No State or Government Surveys have ever been made to determine their profiles, and it is, therefore, impossible at present to make a detailed statement of the water powers. The tabulated statement given above shows the cubic feet per second flowing in the streams, at certain places during low season of ordinary years, like 1900 and 1901.

This flow at any point multiplied by the total practical fall in feet that can be brought upon a water wheel on the given stream at that point, and divided by 11 gives the net available horse power at that point, during low season of a year like 1900 or 1901.

The "Cubic feet per second" flowing at the given points and the corresponding "Drainage areas" can be used to get by pro-

portion the discharge at other points of same stream whose drainage areas are known.

Actual discharge measurements have been made on these streams at various points and at various stages of water, as is shown by the following list of Miscellaneous Discharge Measurements. As that date of these measurements are given, the stage of water as related to minimum for 1900-1901 can be approximated by noting the stage at regular stations on the same dates.

Miscellaneous discharge measurements made by James R. Hall on tributaries of Tallapoosa River.

1900.

August 2—Sougahatchee Creek, Meaders bridge; discharge 125 second-feet.

August 3—Blue Creek, Susanna, Ala., postoffice; 34 second-feet.

August 28—Elkahatchee Creek, Island Home postoffice; discharge, 184 second-feet.

August 30—Timber Cut Creek, Near Welches Ferry; discharge, 18 second-feet.

December 12—Chattasofka Creek, New Bridge, near Dadeville; discharge, 35 second-feet.

1901.

February 11—Wind Creek, Starr's bridge, near Meltons Mill postoffice; discharge, 66 second-feet.

February 11—Sougahatchee Creek, Lovelady's bridge, near Thadeus; discharge 453 second-feet.

February 13—Blue Creek, Farrows Mill, Susanna postoffice; discharge 117 second-feet.

February 13—Channahatchee Creek, Freeman's Mill, Channahatchee postoffice; discharge 80 second-feet.

February 27—Kowaliga Creek, Benson's bridge, Kowaliga postoffice; discharge 154 second-feet.

March 5—Emuckfaw Creek, Hamlett's Mill, Zana postoffice; discharge 113 second-feet.

March 11—Moore's Creek, near Dudleyville; discharge 29 second-feet.

March 12—Chattahaspa Creek, Scott's Mill, near Tiller Crossroads postoffice; discharge 203 second-feet.

March 12—Cohoasanocsa Creek, Leverett's Mill, near Milltown postoffice; discharge 122 second-feet.

March 12—High Pine Creek, Lile's Gin, Happy Land postoffice; discharge 89 second-feet.

March 12—Beaver Dam Creek, near Louina postoffice; discharge 30 second-feet.

March 13—Corn House Creek, Swann's Store, near Level Road postoffice; discharge 31 second-feet.

March 13—Wild Cat Creek, Murphy's Mill, near Gay postoffice; discharge, 32 second-feet.

March 13—Tallapoosa River, below mouth of Little Tallapoosa River, near Goldburg; discharge, 2,400 second-feet.

March 13—Crooked Creek, near Goldberg; discharge 183 second-feet.

March 13—Hurricane Creek, near Almond postoffice; discharge, 29 second-feet.

CHAPTER III.

COOSA RIVER AND TRIBUTARIES.

The Regular Stations that will be used in the following discussion are: Riverside, Ala., and Rome, Ga., on the Coosa River; and Nottingham, Ala., on Talladega Creek. Numerous miscellaneous discharge measurements at other points will also be used.

Under the heading of each station all the investigations made at the station are given, together with the facts deduced therefrom.

1. RIVERSIDE STATION, ON COOSA RIVER.

This station is at Riverside, Ala., in the Springville quadrangle of the United States Geological Survey map, in latitude $33^{\circ} 37'$ and longitude $85^{\circ} 12'$, at the bridge of the Southern Railway, Georgia Pacific Division, across the Coosa River. The river here flows in a southerly direction, the railroad running from east to west. The town of Riverside is on the right or west bank of the river, and the railroad depot is about 1,000 feet west of the bridge, which is of iron and about 30 feet above low water. Beginning at the left bank, there are two spans of 154 feet each; then a drawbridge 220 feet, revolving on a large center pier; then a stationery span, 80 feet in length, to west or right bank abutment. There is no running water at low stages under the last-named span.

At low water the flowing river is 480 feet wide, including three piers, and is from 4 to 10 feet deep. Very little of the current is too slow to turn any meter. It is somewhat irregular, as there are shoals and some old cribs just above the bridge, but for all stages it is probably the best station that can be found on the river at a bridge and easy of access.

On September 8, 1896, a discharge measurement was made by B. M. Hall, and two bench marks were established. On September 22, 1896, another discharge measurement was made, a wire gage was put in, and Mr. J. W. Foster, sawyer at a large sawmill about 300 feet distant, on right bank of river, below the bridge, was employed as observer.

The initial point is top of left abutment at the edge toward the river, on the downstream side of the bridge, from which side soundings and meter measurements are made. The rod of wire gage is nailed to outside guard rail, downstream side, next to the last panel of stationary bridge before reaching the pier at end of draw span. The rod is 14 feet long and divided to feet and tenths. The bench mark is the top of capstone on the large circular center pier of turn span. It is 26.80 feet above datum of gage at downstream side of pier.

The drainage area is 6,850 square miles, and is mapped on atlas sheets Springville, Anniston, Gadsden, Fort Payne, Rome, Tallapoosa, Marietta, Cartersville, Suwanee, Ellijay, Dalton, Cleveland, Ringgold, and Stevenson of the United States Geological Survey.

The following discharge measurements were made during 1896 by B. M. Hall and others:

September 8: Gage height, 0.70 feet; discharge, 1,630 second-feet.

September 25: Gage height, 0.50 feet; discharge, 1,403 second-feet.

October 30: Gage height, 0.88 feet; discharge, 1,986 second-feet.

December 21: Gage height, 1.57 feet; discharge, 3,272 second-feet.

Daily gage height in feet of Coosa river at Riverside, Ala., for 1896.

Day.	Sept.	Oct.	Nov.	Dec.	Day.	Sept.	Oct.	Nov.	Dec.
1.....		0.60	1.10	1.30	17.....		0.55	4.70	2.10
2.....		1.75	1.40	2.10	18.....		.65	4.20	2.20
3.....		3.10	1.20	4.38	19.....		.80	3.20	2.00
4.....		2.75	1.10	3.80	20.....		.85	2.30	1.80
5.....		2.00	1.05	3.20	21.....		.75	1.50	1.70
6.....		1.50	1.10	2.50	22.....		.70	1.40	1.50
7.....		1.20	1.20	2.20	23.....		.60	1.35	1.45
8.....		.85	2.55	1.90	24.....		.55	1.30	1.40
9.....		.70	2.30	1.70	25.....		.60	1.25	1.35
10.....		.60	1.90	1.60	26.....		.70	1.20	1.30
11.....		.65	1.30	1.55	27.....		.45	.80	1.15
12.....		.60	1.60	1.55	28.....		.45	.85	1.15
13.....		.60	2.25	1.60	29.....		.45	.90	1.10
14.....		.60	2.70	1.60	30.....		.50	.95	1.20
15.....		.55	4.00	1.80	31.....		.85	.....	1.10
16.....		.55	5.20	2.00					

Rating table for Coosa River at Riverside, Ala., for 1896.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height	Discharge.
<i>Feet.</i>	<i>Second Ft.</i>	<i>Feet.</i>	<i>Second Ft.</i>	<i>Feet.</i>	<i>Second Ft.</i>
0.5	1,400	2.1	4,630	3.7	9,640
0.6	1,500	2.2	4,920	3.8	9,980
0.7	1,630	2.3	5,200	3.9	10,330
0.8	1,780	2.4	5,500	4.0	10,680
0.9	1,930	2.5	5,800	4.1	11,030
1.0	2,100	2.6	6,100	4.2	11,390
1.1	2,280	2.7	6,400	4.3	11,750
1.2	2,480	2.8	6,700	4.4	12,110
1.3	2,680	2.9	7,010	4.5	12,470
1.4	2,880	3.0	7,320	4.6	12,840
1.5	3,090	3.1	7,640	4.7	13,210
1.6	3,320	3.2	7,970	4.8	13,580
1.7	3,560	3.3	8,300	4.9	13,950
1.8	3,820	3.4	8,630	5.0	14,330
1.9	4,080	3.5	8,960	5.1	14,710
2.0	4,360	3.6	9,300	5.2	15,100

NOTE.—This table applied to the foregoing "Daily gage heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.

The following discharge measurements were made during 1897 by Max Hall and others:

March 31: Gage height, 4.53 feet; discharge, 12,515 second-feet.

June 17: Gage height, 1.54 feet; discharge, 3,747 second-feet.

July 21: Gage height, 5.55 feet; discharge, 16,925 second-feet.

August 20: Gage height, 2.58 feet; discharge, 6,174 second-feet.

November 29: Gage height, 0.80 feet; discharge, 1,854 second-feet.

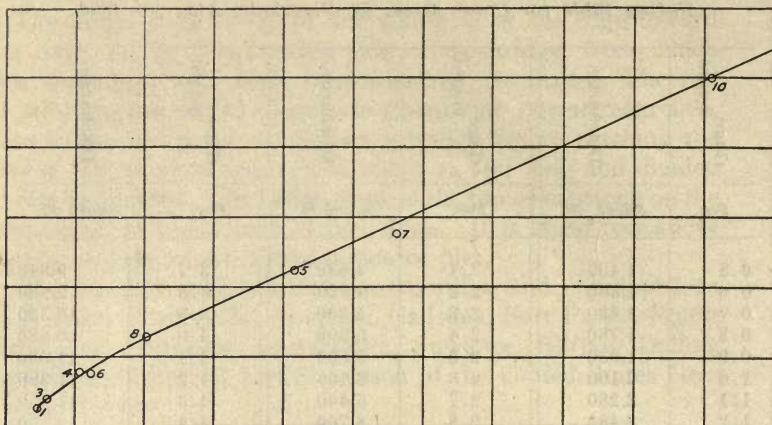


Fig. 8.—Rating curve for Riverside station on Coosa River, Ala.

*Daily gage height, in feet, of Coosa River, at Riverside, Ala.,
for 1897.*

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	1.10	2.00	5.00	4.30	3.40	1.90	1.45	2.00	1.20	0.50	0.70	0.80
2.....	1.10	2.50	4.50	4.45	3.10	1.90	1.45	1.80	1.10	.50	.70	.90
3.....	1.10	5.35	4.25	5.20	3.05	1.90	1.40	1.60	1.30	.50	.70	.95
4.....	1.10	7.35	3.90	7.00	3.60	1.85	1.40	1.50	1.60	.50	.65	1.20
5.....	1.10	7.70	4.20	8.60	3.20	1.85	1.45	1.45	1.30	.45	.80	2.50
6.....	1.20	7.90	5.80	9.50	3.00	1.80	1.50	1.40	1.20	.45	1.05	3.00
7.....	1.25	9.00	11.40	10.50	3.80	1.90	1.50	1.50	1.10	.45	1.15	2.90
8.....	1.30	7.70	13.30	11.15	3.70	2.15	2.40	1.50	1.00	.45	1.10	2.40
9.....	1.35	6.40	12.55	12.15	2.65	2.10	2.30	1.60	.90	.45	1.00	2.15
10.....	1.35	5.90	12.65	11.90	2.60	1.90	2.05	1.70	.85	.45	.95	2.00
11.....	1.35	5.20	12.70	10.70	2.50	1.90	2.50	1.70	.80	.40	.85	1.70
12.....	1.30	7.35	12.80	9.10	2.55	2.00	2.70	2.00	.80	.40	.85	1.60
13.....	1.40	8.30	13.45	7.30	2.65	1.90	2.50	2.50	.75	.45	.85	1.60
14.....	2.00	8.20	14.80	6.05	2.10	1.85	2.00	2.30	.75	.45	.85	2.00
15.....	3.50	7.50	14.60	5.60	3.90	1.60	1.80	2.00	.80	1.45	.80	2.50
16.....	4.00	6.60	14.80	5.30	4.00	1.70	1.70	1.80	.85	1.65	.75	3.00
17.....	4.90	5.70	14.70	5.60	4.00	1.50	1.80	1.60	.85	1.40	.70	3.30
18.....	5.35	5.00	14.70	5.40	3.60	1.60	1.95	1.50	.80	1.35	.70	3.15
19.....	5.00	4.50	14.50	5.00	3.20	1.90	2.00	1.90	.80	1.20	.70	2.65
20.....	4.80	4.00	15.30	4.60	3.00	2.00	3.00	2.60	.75	1.00	.65	2.10
21.....	6.50	4.60	14.90	4.30	2.70	1.80	5.20	2.00	.75	.90	.65	2.20
22.....	7.00	4.65	14.70	4.00	2.35	1.70	6.40	1.70	.70	.85	.65	2.80
23.....	7.35	6.00	14.50	3.80	2.30	1.60	8.00	1.60	.70	.80	.65	4.20
24.....	7.00	7.90	13.70	3.60	2.25	1.55	6.20	1.70	.70	.70	.65	4.85
25.....	5.40	9.00	12.20	3.40	2.25	1.50	4.50	1.75	.65	.80	.65	4.95
26.....	4.70	9.00	10.60	3.30	2.15	1.45	4.00	1.60	.65	.75	.65	4.55
27.....	3.80	8.00	8.50	3.25	2.05	1.45	3.00	1.60	.60	.60	.65	3.85
28.....	3.00	6.20	6.50	2.20	2.00	1.40	2.60	1.50	.55	.65	.65	3.20
29.....	2.70	.....	5.30	3.10	2.00	1.45	2.50	1.40	.55	.80	.70	2.95
30.....	2.50	.....	4.90	3.20	1.95	1.45	3.00	1.35	.55	.75	.75	2.85
31.....	2.20	.....	4.60	.....	1.90	....	2.60	1.30	.....	.70	.....	2.50

Rating table for Coosa River at Riverside, Ala., for 1897.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second Ft.	Feet.	Second Ft.	Feet.	Second Ft.
0.4	1,350	2.0	4,520	5.0	14,046
0.5	1,400	2.2	5,100	6.0	17,306
0.6	1,500	2.4	5,700	7.0	20,566
0.7	1,650	2.6	6,300	8.0	23,826
0.8	1,820	2.8	6,910	9.0	27,086
0.9	2,010	3.0	7,530	10.0	30,346
1.0	2,210	3.2	8,178	11.0	33,606
1.2	2,630	3.4	8,830	12.0	36,866
1.4	3,070	3.6	9,482	13.0	40,126
1.6	3,540	3.8	10,134	14.0	43,386
1.8	4,020	4.0	10,786		

NOTE.—This table applied to the foregoing "Daily gage heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.

The following discharge measurements were made during 1898 by Max Hall and others:

January 27: Gage height, 10.00 feet; discharge, 30,359 second-feet.

March 9: Gage height, 1.60 feet; discharge, 3,538 second-feet.

May 3: Gage height, 3.22 feet; discharge, 7,758 second-feet.

May 25: Gage height, 1.39 feet; discharge, 3,172 second-feet.

August 3: Gage height, 3.92 feet; discharge, 9,524 second-feet.

September 7: Gage height, 11.05 feet; discharge, 37,811 second-feet.

October 19: Gage height, 6.80 feet; discharge, 14,484 second-feet.

November 22: Gage height, 5.85 feet; discharge, 16,384 second-feet.

*Daily gage height, in feet, of Coosa River at Riverside, Ala.,
for 1898.*

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	2.30	6.00	1.65	6.80	3.90	1.30	1.15	4.25	2.20	2.20	2.60	3.70
2.....	2.15	5.25	1.70	7.50	3.60	1.25	1.05	4.00	1.80	1.80	2.50	4.00
3.....	2.10	4.00	1.80	6.80	3.30	1.20	1.00	4.10	1.75	1.70	2.50	3.90
4.....	2.00	3.25	1.80	5.50	3.05	1.20	.95	4.00	5.80	2.00	2.45	3.70
5.....	1.90	3.00	1.80	5.80	2.90	1.30	.95	3.30	9.30	6.80	2.40	3.70
6.....	1.85	2.80	1.75	9.30	2.70	1.25	.90	4.00	10.20	11.20	2.40	3.90
7.....	1.75	2.75	1.70	10.50	2.55	1.20	.95	5.50	11.00	11.90	2.40	4.00
8.....	1.70	2.70	1.70	10.80	2.40	1.10	1.00	5.30	11.30	15.80	2.40	4.00
9.....	1.65	2.60	1.65	10.40	2.30	1.05	1.15	4.50	11.60	14.70	2.45	3.70
10.....	1.60	2.50	1.65	8.90	2.20	1.05	1.65	4.30	10.80	12.50	2.55	3.30
11.....	1.60	2.40	1.60	7.50	2.15	1.00	2.15	4.50	8.70	12.00	2.75	3.25
12.....	1.65	2.30	1.60	6.00	2.10	1.48	2.15	4.70	5.80	11.20	2.75	3.10
13.....	1.80	2.30	1.70	5.00	2.00	1.10	2.10	6.70	4.75	8.80	2.70	3.00
14.....	2.00	2.20	1.80	4.40	1.95	1.25	2.15	5.90	4.10	5.50	2.65	2.90
15.....	3.10	2.10	2.00	4.00	1.90	1.15	2.05	4.70	3.40	4.40	2.70	2.80
16.....	3.00	2.00	2.25	3.70	1.85	1.00	2.30	3.70	3.00	3.60	2.80	2.65
17.....	2.80	1.95	3.00	3.50	1.80	1.65	3.10	3.00	2.70	3.00	3.00	2.60
18.....	2.60	1.90	4.75	4.00	1.75	1.70	3.05	2.75	2.50	3.50	3.15	2.60
19.....	2.80	1.85	5.50	5.10	1.70	1.65	2.50	2.55	2.25	5.40	3.25	2.70
20.....	3.00	1.80	4.70	5.80	1.60	1.55	1.90	2.45	2.20	6.40	3.70	2.90
21.....	4.10	1.80	4.00	5.50	1.70	1.95	1.65	2.40	2.15	6.30	4.20	4.00
22.....	5.80	1.80	3.25	4.00	1.65	2.10	1.50	2.40	2.20	6.00	5.15	3.80
23.....	6.05	1.75	3.00	4.50	1.55	2.30	1.35	2.35	2.55	5.80	7.00	3.40
24.....	6.50	1.75	2.75	5.75	1.50	2.50	1.25	2.30	3.55	5.00	5.90	3.00
25.....	7.20	1.70	2.30	7.10	1.45	2.05	1.20	2.15	4.30	4.35	5.20	2.75
26.....	9.00	1.70	2.15	7.80	1.40	1.75	1.40	2.00	3.90	4.00	4.90	2.70
27.....	10.20	1.70	2.00	7.45	1.55	1.60	2.35	1.80	3.40	3.75	4.60	2.50
28.....	10.65	1.65	2.00	6.45	1.70	1.60	3.15	2.00	3.15	3.30	4.20	2.40
29.....	10.45	.....	2.30	5.50	1.60	1.45	3.10	2.50	3.00	3.00	4.00	2.30
30.....	9.45	.....	3.00	4.75	1.45	1.30	3.40	3.00	2.75	2.75	3.80	2.30
31.....	7.55	.....	4.50	.....	1.35	....	4.00	2.60	.....	2.70	.....	2.40

Rating table for Coosa River at Riverside, Ala., for 1898.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second-feet.	Feet.	Second-feet.	Feet.	Second-feet.	Feet.	Second-feet.
0.9	2,140	4.7	12,301	8.5	25,335	12.3	46,960
1.0	2,320	4.8	12,644	8.6	25,678	12.4	47,680
1.1	2,520	4.9	12,987	8.7	26,021	12.5	48,400
1.2	2,720	5.0	13,330	8.8	26,364	12.6	49,120
1.3	2,925	5.1	13,673	8.9	26,707	12.7	49,840
1.4	3,130	5.2	14,016	9.0	27,050	12.8	50,560
1.5	3,340	5.3	14,359	9.1	27,433	12.9	51,280
1.6	3,550	5.4	14,702	9.2	27,800	13.0	52,000
1.7	3,760	5.5	15,045	9.3	28,175	13.1	52,720
1.8	3,970	5.6	15,388	9.4	28,550	13.2	53,440
1.9	4,185	5.7	15,731	9.5	28,965	13.3	54,160
2.0	4,400	5.8	16,074	9.6	29,380	13.4	54,885
2.1	4,620	5.9	16,417	9.7	29,815	13.5	55,600
2.2	4,840	6.0	16,760	9.8	30,250	13.6	56,320
2.3	5,070	6.1	17,103	9.9	30,725	13.7	57,040
2.4	5,300	6.2	17,446	10.0	31,200	13.8	57,760
2.5	5,540	6.3	17,789	10.1	31,725	13.9	58,480
2.6	5,780	6.4	18,132	10.2	32,250	14.0	59,200
2.7	6,030	6.5	18,475	10.3	32,825	14.1	59,920
2.8	6,280	6.6	18,818	10.4	33,400	14.2	60,640
2.9	6,540	6.7	19,161	10.5	34,067	14.3	61,360
3.0	6,800	6.8	19,540	10.6	34,725	14.4	62,080
3.1	7,080	6.9	19,847	10.7	35,442	14.5	62,800
3.2	7,360	7.0	20,190	10.8	36,160	14.6	63,520
3.3	7,655	7.1	20,533	10.9	36,880	14.7	64,240
3.4	7,950	7.2	20,876	11.0	37,600	14.8	64,960
3.5	8,260	7.3	21,219	11.1	38,320	14.9	65,680
3.6	8,570	7.4	21,562	11.2	39,040	15.0	66,400
3.7	8,895	7.5	21,905	11.3	39,760	15.1	67,120
3.8	9,220	7.6	22,248	11.4	40,480	15.2	67,840
3.9	9,560	7.7	22,591	11.5	41,200	15.3	68,560
4.0	9,900	7.8	22,934	11.6	41,920	15.4	69,280
4.1	12,243	7.9	23,277	11.7	42,640	15.5	70,000
4.2	10,586	8.0	23,620	11.8	43,360	15.6	70,720
4.3	10,929	8.1	23,963	11.9	44,080	15.7	71,440
4.4	11,272	8.2	24,306	12.0	44,800	15.8	72,160
4.5	11,615	8.3	24,649	12.1	45,520	15.9	72,880
4.6	11,958	8.4	24,992	12.2	46,240	16.0	73,600

NOTE.—This table applied to the foregoing "Daily gage heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.



The following discharge measurements were made during 1899 by Max Hall and others:

April 26: Gage height, 9.00 feet; discharge, 29,069 second-feet.
 May 3: Gage height, 4.05 feet; discharge, 10,592 second-feet.
 May 20: Gage height, 2.70 feet; discharge, 6,276 second-feet.
 June 14: Gage height, 2.20 feet; discharge, 5,010 second-feet.
 August 26: Gage height, 1.42 feet; discharge, 3,791 second-feet.
 September 23: Gage height, 1.00 foot; discharge, 2,457 second-feet.
 November 7: Gage height, 0.85 foot; discharge, 2,271 second-feet.
 December 9: Gage height, 1.20 feet; discharge, 2,727 second-feet.

Daily gage height, in feet, of Coosa River at Riverside, Ala., for 1899.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	2.80	5.90	12.10	10.30	5.00	2.70	1.70	3.95	2.30	0.90	0.95	2.60
2.....	2.75	6.30	12.20	10.20	4.50	2.80	1.70	3.00	2.40	.90	.95	2.00
3.....	2.75	7.50	12.30	10.00	4.20	2.80	1.65	2.30	2.80	.90	.95	1.60
4.....	2.80	7.40	12.10	9.80	3.95	2.60	1.60	2.00	2.40	.90	.95	1.50
5.....	2.80	9.10	10.10	8.90	3.80	2.30	1.50	1.90	2.10	.90	.95	1.45
6.....	3.00	12.10	9.00	8.75	3.75	2.10	1.50	1.75	2.00	.90	.95	1.40
7.....	3.50	14.10	8.00	9.00	3.60	2.00	1.45	1.65	1.85	.90	.95	1.35
8.....	4.30	14.30	7.50	10.00	4.00	2.00	1.40	1.50	1.40	.90	.95	1.30
9.....	4.20	14.30	7.25	12.30	3.85	1.95	1.70	1.50	1.30	.95	.95	1.30
10.....	4.40	14.10	7.00	12.00	3.60	1.95	1.60	1.55	1.25	1.20	.95	1.35
11.....	5.20	13.80	6.15	11.70	3.45	1.95	1.50	1.55	1.25	1.30	.95	1.40
12.....	5.90	13.00	5.20	10.00	3.30	1.95	1.50	1.60	2.20	1.40	.95	5.80
13.....	5.60	12.00	5.50	8.90	3.20	2.00	1.40	1.50	2.50	1.30	.95	8.25
14.....	5.00	10.90	7.50	7.90	3.00	2.15	1.40	1.45	2.65	1.20	1.00	8.00
15.....	4.70	8.70	8.30	6.30	3.00	2.80	1.30	1.50	2.00	1.20	1.00	6.00
16.....	4.90	7.90	16.00	5.55	2.95	3.20	1.30	1.50	1.40	1.20	1.00	4.50
17.....	5.00	7.60	17.40	5.25	2.95	2.95	1.30	1.50	1.25	1.10	1.00	3.75
18.....	4.90	7.80	17.00	5.10	2.80	2.50	1.20	1.55	1.20	1.00	1.00	3.60
19.....	4.70	8.10	16.50	5.00	2.80	2.25	1.30	1.50	1.20	.95	1.00	3.40
20.....	4.60	8.20	16.30	4.80	2.75	2.00	1.50	1.45	1.10	.95	1.00	3.00
21.....	4.20	8.00	16.35	4.60	2.75	1.80	1.50	1.45	1.00	.90	.95	2.85
22.....	4.00	7.65	16.20	4.30	2.70	1.70	1.90	1.35	.95	.90	.95	2.75
23.....	3.90	8.00	15.90	4.75	2.70	1.70	3.20	1.30	1.00	.95	.95	3.00
24.....	3.90	8.10	15.70	5.65	2.65	1.60	4.70	1.30	1.00	1.20	.95	5.40
25.....	4.00	7.30	15.50	8.90	2.60	1.75	3.60	1.30	1.00	1.15	1.00	6.40
26.....	4.25	7.00	14.90	9.00	2.50	1.60	3.20	1.60	1.00	1.00	2.15	7.10
27.....	4.15	8.30	13.25	8.90	2.45	1.60	3.00	1.20	.95	1.00	2.90	7.00
28.....	4.00	11.00	11.00	8.30	2.35	1.65	3.60	1.10	.95	.95	3.00	6.60
29.....	3.90	.....	8.00	6.90	2.30	1.70	4.20	1.50	.90	.95	3.00	6.00
30.....	3.75	.....	7.90	5.45	2.20	1.65	5.20	2.10	.90	.90	2.75	4.85
31.....	3.70	.....	8.50	.....	2.70	.....	4.75	2.10	.....	.95	.....	4.00

Rating table for Coosa river at Riverside, Ala., for 1899.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second ft.	Feet.	Second feet.	Feet.	Second feet.	Feet.	Second feet.
0.9	2,330	5.2	14,740	9.5	30,650	13.8	46,560
1.0	2,460	5.3	15,110	9.6	31,020	13.9	46,930
1.1	2,600	5.4	15,480	9.7	31,390	14.0	47,300
1.2	2,760	5.5	15,850	9.8	31,760	14.1	47,670
1.3	2,920	5.6	16,220	9.9	32,130	14.2	48,040
1.4	3,100	5.7	16,590	10.0	32,500	14.3	48,410
1.5	3,300	5.8	16,960	10.1	32,870	14.4	48,780
1.6	3,500	5.9	17,330	10.2	33,240	14.5	49,150
1.7	3,720	6.0	17,700	10.3	33,610	14.6	49,520
1.8	3,940	6.1	18,070	10.4	33,980	14.7	49,890
1.9	4,160	6.2	18,440	10.5	34,350	14.8	50,260
2.0	4,400	6.3	18,810	10.6	34,720	14.9	50,630
2.1	4,600	6.4	19,180	10.7	35,090	15.0	51,000
2.2	4,900	6.5	19,550	10.8	35,460	15.1	51,370
2.3	5,160	6.6	19,920	10.9	35,830	15.2	51,740
2.4	5,430	6.7	20,290	11.0	36,200	15.3	52,110
2.5	5,700	6.8	20,660	11.1	36,570	15.4	52,480
2.6	5,970	6.9	21,030	11.2	36,940	15.5	52,850
2.7	6,250	7.0	21,400	11.3	37,310	15.6	53,220
2.8	6,530	7.1	21,770	11.4	37,680	15.7	53,590
2.9	6,810	7.2	22,140	11.5	38,050	15.8	53,960
3.0	7,100	7.3	22,510	11.6	38,420	15.9	54,330
3.1	7,400	7.4	22,880	11.7	38,790	16.0	54,700
3.2	7,700	7.5	23,250	11.8	39,160	16.1	55,070
3.3	8,010	7.6	23,620	11.9	39,530	16.2	55,440
3.4	8,330	7.7	23,990	12.0	39,900	16.3	55,810
3.5	8,650	7.8	24,360	12.1	40,270	16.4	56,280
3.6	8,970	7.9	24,730	12.2	40,640	16.5	56,650
3.7	9,290	8.0	25,100	12.3	41,010	16.6	57,020
3.8	9,620	8.1	25,470	12.4	41,380	16.7	57,390
3.9	9,950	8.2	25,840	12.5	41,750	16.8	57,760
4.0	10,300	8.3	26,210	12.6	42,120	16.9	58,130
4.1	10,670	8.4	26,580	12.7	42,490	17.0	58,400
4.2	11,040	8.5	26,950	12.8	42,860	17.1	58,770
4.3	11,410	8.6	27,320	12.9	43,230	17.2	59,140
4.4	11,780	8.7	27,690	13.0	43,600	17.3	59,510
4.5	12,150	8.8	28,060	13.1	43,970	17.4	59,880
4.6	12,520	8.9	28,430	13.2	44,340	17.5	60,250
4.7	12,890	9.0	28,800	13.3	44,710	17.6	60,620
4.8	13,260	9.1	29,170	13.4	45,080	17.7	60,990
4.9	13,630	9.2	29,540	13.5	45,450	17.8	61,360
5.0	14,000	9.3	29,910	13.6	45,720	17.9	61,730
5.1	14,370	9.4	30,280	13.7	46,190	18.0	62,100

NOTE.—This table applied to the foregoing "Daily gage heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.

The following discharge measurements were made during 1900 by Max Hall and others:

February 10: Gage height, 5.03 feet; discharge, 13,493 second-feet.

March 21: Gage height, 12.50 feet; discharge, 43,759 second-feet.

May 5: Gage height, 4.15 feet; discharge, 11,196 second-feet.

August 21: Gage height, 2.32 feet; discharge, 5,609 second-feet.

December 28: Gage height, 4.25 feet; discharge, 11,335 second-feet.

Daily gage height, in feet, of Coosa River, near Riverside, Ala., for 1900.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	3.50	2.70	6.90	6.65	5.00	2.75	11.60	4.70	1.85	1.55	2.30	5.75
2.....	3.00	2.65	7.55	6.25	5.30	2.80	10.10	3.90	2.00	1.55	2.25	4.35
3.....	2.50	2.60	6.90	6.00	5.30	2.90	8.90	3.00	2.20	1.50	2.50	3.75
4.....	2.40	2.50	6.25	5.60	4.75	2.60	8.20	2.75	2.10	1.50	2.50	3.40
5.....	2.15	2.60	5.40	5.10	4.30	2.70	7.50	2.55	2.00	1.50	2.50	3.30
6.....	2.05	2.80	5.00	4.90	4.20	3.45	6.45	2.40	1.80	1.45	2.40	4.35
7.....	1.95	2.95	4.90	4.75	4.00	3.90	5.50	2.25	1.70	1.40	2.40	6.05
8.....	1.95	3.00	6.00	4.40	3.65	4.20	4.70	2.15	1.60	1.50	2.35	5.40
9.....	2.00	3.75	8.75	4.35	3.40	7.00	5.00	2.10	1.50	2.20	2.30	4.80
10.....	2.00	4.25	10.00	4.30	3.30	8.30	4.30	2.00	1.45	2.35	2.30	4.00
11.....	2.10	5.80	10.55	6.50	3.15	8.00	4.20	2.00	1.35	3.25	2.15	3.60
12.....	3.60	6.50	10.05	12.40	2.95	7.70	4.10	1.90	1.30	3.60	2.10	3.15
13.....	6.00	13.30	8.75	12.90	2.70	6.70	5.65	2.25	1.25	3.80	2.10	2.95
14.....	7.40	15.30	7.50	11.70	2.70	4.30	4.65	2.00	1.20	2.80	2.00	2.80
15.....	7.00	15.20	5.60	9.50	2.65	4.50	3.75	1.90	3.35	3.00	1.90	2.70
16.....	6.40	14.50	6.00	7.20	2.65	4.70	3.60	1.85	6.00	2.90	1.80	2.65
17.....	5.10	14.00	6.30	12.40	2.60	5.00	3.50	2.00	7.00	2.80	1.75	2.60
18.....	4.00	13.25	6.00	18.10	2.60	4.90	3.35	2.00	7.50	2.65	1.70	2.55
19.....	4.25	12.80	6.50	17.55	2.60	6.90	3.10	2.20	6.00	2.50	1.80	2.55
20.....	8.00	12.10	10.00	15.65	2.60	6.90	3.00	2.10	4.35	2.40	2.00	3.00
21.....	9.70	9.00	12.20	13.95	2.65	6.45	2.90	2.20	3.20	2.30	2.50	3.30
22.....	10.00	7.80	12.85	13.15	3.20	6.10	2.70	2.00	2.50	2.20	4.00	5.20
23.....	9.40	6.80	12.60	12.65	2.90	7.00	2.45	2.00	2.00	2.15	3.80	7.00
24.....	8.75	7.20	11.80	12.20	3.00	11.35	2.50	1.95	1.90	3.00	3.20	7.30
25.....	7.75	6.90	10.60	10.80	3.25	12.50	2.60	1.90	1.85	5.25	3.10	5.90
26.....	6.00	6.50	10.30	9.15	3.10	14.10	2.50	2.20	1.90	7.50	3.00	6.35
27.....	4.10	5.25	10.20	7.90	3.20	14.40	2.60	2.10	1.80	5.00	4.35	5.90
28.....	3.60	5.00	9.85	6.50	3.00	14.60	3.70	2.00	1.65	3.80	6.40	4.90
29.....	3.30	.....	9.50	5.70	2.80	13.80	5.70	1.95	1.60	3.00	9.20	4.30
30.....	3.00	.....	8.50	5.35	2.70	12.80	5.30	1.90	1.55	2.65	8.20	4.00
31.....	2.70	.....	7.20	.....	2.60	.....	5.90	1.90	.....	2.50	.....	6.50

The following discharge measurements were made during 1901 by Max Hall and others:

January 8: Gage height, 3.85 feet; discharge, 9,572 second-feet.

March 18: Gage height, 3.70 feet; discharge, 9,333 second-feet.

August 24: Gage height, 12.95 feet; discharge, 44,554 second-feet.

November 14: Gage height, 1.70 feet; discharge, 4,039 second-feet.

Daily gage height, in feet, of Coosa River, at Riverside, Ala., for 1901.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	7.30	6.00	3.55	14.35	4.80	5.20	3.00	2.15	5.60	2.70	1.90	1.85
2.....	7.35	6.50	3.50	14.40	4.60	8.20	2.90	2.10	5.00	4.00	1.85	1.90
3.....	6.50	9.00	3.50	13.30	4.30	8.25	2.85	2.10	4.50	3.20	1.85	1.95
4.....	6.00	10.60	3.50	11.90	4.15	7.20	2.80	2.05	4.30	3.00	1.85	1.95
5.....	5.50	11.00	3.40	10.40	4.00	5.75	2.80	2.00	3.65	2.90	1.80	2.20
6.....	5.00	12.00	3.30	10.30	3.95	5.00	2.75	2.20	3.30	2.75	1.80	2.10
7.....	4.25	11.90	3.20	9.00	3.90	4.80	2.75	4.10	3.05	2.60	1.80	2.00
8.....	3.95	11.50	3.10	7.25	3.75	4.30	2.70	4.80	3.00	2.50	1.85	2.00
9.....	3.70	9.90	3.10	6.50	3.60	4.20	3.50	4.25	2.90	2.30	1.85	2.10
10.....	3.60	9.60	3.40	5.60	3.45	6.20	4.00	3.50	2.85	2.30	1.80	2.10
11.....	6.50	9.90	5.50	5.00	3.25	6.00	3.50	2.90	2.75	2.25	1.80	2.05
12.....	14.10	9.60	6.50	4.80	3.15	5.00	2.90	2.75	2.70	2.30	1.80	2.00
13.....	15.70	8.90	7.50	4.80	3.10	4.25	2.50	2.60	2.65	3.00	1.80	2.00
14.....	15.40	7.60	7.00	6.50	3.10	3.75	2.40	3.20	2.65	2.80	1.75	2.90
15.....	15.10	6.50	6.30	7.50	3.00	3.75	2.35	3.20	2.60	2.70	1.75	11.50
16.....	14.90	5.80	5.25	8.30	2.95	3.80	2.20	3.40	2.85	2.50	1.80	12.00
17.....	14.30	5.45	4.25	7.80	2.95	3.80	3.15	5.30	3.90	2.45	1.80	12.50
18.....	13.90	5.00	3.75	6.50	2.90	4.90	2.90	9.60	5.60	2.60	1.80	12.40
19.....	13.30	4.80	3.55	10.50	2.90	5.00	2.90	9.65	6.30	2.40	1.80	11.00
20.....	11.30	4.60	3.55	14.00	2.85	4.50	3.20	10.00	7.50	2.35	1.75	10.20
21.....	8.30	4.35	3.75	14.50	4.00	3.90	3.00	11.50	7.20	2.30	1.75	9.20
22.....	6.25	4.20	3.70	14.30	8.20	3.60	2.95	11.00	6.00	2.30	1.75	8.00
23.....	5.30	4.00	3.50	13.50	9.90	3.50	2.90	11.50	4.50	2.25	1.75	4.50
24.....	4.60	3.90	4.30	12.50	10.75	3.25	2.75	12.50	3.30	2.20	1.85	3.60
25.....	5.30	3.85	13.90	11.30	11.85	3.15	2.70	12.90	3.00	2.10	1.90	4.10
26.....	5.80	3.65	15.90	9.90	11.90	3.00	2.60	12.40	2.70	2.10	2.10	4.60
27.....	6.30	3.65	15.20	7.90	11.80	2.90	2.40	12.00	2.60	2.10	2.00	5.10
28.....	6.40	3.60	14.70	6.80	11.00	3.00	2.20	11.50	2.50	2.05	2.00	6.50
29.....	5.85	.....	14.25	5.90	9.60	2.90	2.50	9.95	2.65	2.05	1.85	11.50
30.....	5.50	.....	14.60	5.20	6.20	3.10	2.40	8.35	2.60	2.00	1.85	15.60
31.....	5.80	.....	15.50	.....	4.60	....	2.20	6.85	.....	1.95	.....	16.00

Rating table for Coosa River at Riverside, Ala., for 1900 and 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second-ft.	Feet.	Second ft.	Feet.	Second-ft.	Feet.	Second-ft.
1.0	2,460	5.6	15,900	10.2	33,900	14.8	52,300
1.1	2,610	5.7	16,250	10.3	34,300	14.9	52,700
1.2	2,760	5.8	16,600	10.4	34,700	15.0	53,100
1.3	2,930	5.9	16,950	10.5	35,100	15.1	53,500
1.4	3,100	6.0	17,300	10.6	35,500	15.2	53,900
1.5	3,300	6.1	17,680	10.7	35,900	15.3	54,300
1.6	3,500	6.2	18,060	10.8	36,300	15.4	54,700
1.7	3,720	6.3	18,440	10.9	36,700	15.5	55,100
1.8	3,940	6.4	18,820	11.0	37,100	15.6	55,500
1.9	4,170	6.5	19,200	11.1	37,500	15.7	55,900
2.0	4,400	6.6	19,580	11.2	37,900	15.8	56,300
2.1	4,650	6.7	19,960	11.3	38,300	15.9	56,700
2.2	4,900	6.8	20,340	11.4	38,700	16.0	57,100
2.3	5,165	6.9	20,720	11.5	39,100	16.1	57,500
2.4	5,430	7.0	21,100	11.6	39,500	16.2	57,900
2.5	5,700	7.1	21,500	11.7	39,900	16.3	58,300
2.6	5,970	7.2	21,900	11.8	40,300	16.4	58,700
2.7	6,250	7.3	22,300	11.9	40,700	16.5	59,100
2.8	6,530	7.4	22,700	12.0	41,100	16.6	59,500
2.9	6,845	7.5	23,100	12.1	41,500	16.7	59,900
3.0	7,100	7.6	23,500	12.2	41,900	16.8	60,300
3.1	7,400	7.7	23,900	12.3	42,300	16.9	60,700
3.2	7,700	7.8	24,300	12.4	42,700	17.0	61,100
3.3	8,015	7.9	24,700	12.5	43,100	17.1	61,500
3.4	8,330	8.0	25,100	12.6	43,500	17.2	61,900
3.5	8,650	8.1	25,500	12.7	43,900	17.3	62,300
3.6	8,970	8.2	25,900	12.8	44,300	17.4	62,700
3.7	9,295	8.3	26,300	12.9	44,700	17.5	63,100
3.8	9,620	8.4	26,700	13.0	45,100	17.6	63,500
3.9	9,960	8.5	27,100	13.1	45,500	17.7	63,900
4.0	10,300	8.6	27,500	13.2	45,900	17.8	64,300
4.1	10,650	8.7	27,900	13.3	46,300	17.9	64,700
4.2	11,000	8.8	28,300	13.4	46,700	18.0	65,100
4.3	11,350	8.9	28,700	13.5	47,100	18.1	65,500
4.4	11,700	9.0	29,100	13.6	47,500	18.2	65,900
4.5	12,050	9.1	29,500	13.7	47,900	18.3	66,300
4.6	12,400	9.2	29,900	13.8	48,300	18.4	66,700
4.7	12,750	9.3	30,300	13.9	48,700	18.5	67,100
4.8	13,100	9.4	30,700	14.0	49,100	18.6	67,500
4.9	13,450	9.5	31,100	14.1	49,500	18.7	67,900
5.0	13,800	9.6	31,500	14.2	49,900	18.8	68,300
5.1	14,150	9.7	31,900	14.3	50,300	18.9	68,700
5.2	14,500	9.8	32,300	14.4	50,700	19.0	69,100
5.3	14,850	9.9	32,700	14.5	51,100		
5.4	15,200	10.0	33,100	14.6	51,500		
5.5	15,550	10.1	33,500	14.7	51,900		

NOTE.—This table applied to the foregoing "Daily gage heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.

Estimated monthly discharge of Coosa River at Riverside, Ala.

[Drainage area, 6,850 square miles.]

Month.	Discharge in second-feet.			Total in acre-feet.	Run-off.	
	Maxi-mum.	Mini-mum.	Mean.		Depth in inches.	Second-feet per square mile.
1896.						
September 27 to 30	1,400	1,350	1,363	10,812	0.03	0.20
October	7,640	1,450	2,218	136,380	0.37	0.32
November	15,100	2,190	4,637	275,921	0.75	0.68
December	12,110	2,280	4,125	253,636	0.69	0.60
1897.						
January	21,707	2,420	8,434	518,590	1.42	1.23
February	27,086	4,520	18,658	1,036,230	2.83	2.72
March	47,624	10,460	32,481	1,997,180	5.47	4.74
April	37,355	5,100	17,698	1,053,105	2.87	2.58
May	10,786	4,270	7,040	432,875	1.19	1.03
June	4,950	3,070	3,915	232,960	0.63	0.57
July	23,826	3,070	7,142	439,145	1.20	1.04
August	6,300	2,850	3,870	237,960	0.64	0.56
September	3,540	1,440	1,976	117,580	0.32	0.29
October	3,660	1,350	1,819	111,845	0.31	0.27
November	2,525	1,570	1,786	106,275	0.29	0.26
December	13,883	1,820	6,566	403,730	1.10	0.96
1898.						
January	35,084	3,550	11,572	711,539	1.95	1.69
February	16,760	3,655	5,763	320,161	0.87	0.84
March	15,045	3,550	5,852	359,828	0.68	0.59
April	36,160	8,260	18,133	1,078,986	2.95	2.65
May	9,560	3,028	4,684	288,010	0.78	0.68
June	5,540	2,320	3,281	195,233	0.54	0.48
July	9,909	2,140	4,289	263,722	0.72	0.63
August	19,161	3,970	8,758	538,512	1.48	1.28
September	41,920	3,865	13,927	828,712	2.26	2.03
October	72,160	3,760	19,936	1,225,825	3.36	2.91
November	20,190	5,300	8,375	498,345	1.36	1.22
December	9,900	5,070	7,376	453,535	1.25	1.08
1899.						
January	17,330	6,390	10,865	668,063	1.78	1.54
February	48,410	17,330	30,974	1,720,209	4.56	4.38
March	60,880	14,740	38,094	2,342,309	6.21	5.39
April	41,010	11,410	24,915	1,482,545	3.94	3.53
May	14,000	4,900	7,742	476,037	1.27	1.10
June	7,700	3,500	4,771	283,894	0.75	0.68
July	14,740	2,760	5,318	326,991	0.86	0.75
August	10,125	2,600	3,806	234,022	0.62	0.54
September	6,530	2,330	3,555	211,537	0.56	0.50
October	3,100	2,330	2,510	154,334	0.41	0.36
November	7,100	2,395	3,086	183,630	0.49	0.44
December	26,025	2,920	10,631	653,675	1.73	1.50

Estimated monthly discharge of Coosa River near Riverside, Ala.

[Drainage area, 7,065 square miles.]

Month	Discharge in second-feet.			Total in acre-feet.	Run-off.	
	Maxi-mum.	Mini-mum.	Mean.		Depth in inches.	Second feet per square mile.
1900.						
January	33,100	4,280	13,344	820,491	2.18	1.89
February	54,300	5,700	23,487	1,304,402	3.45	3.32
March	44,500	13,450	26,822	1,649,221	4.38	3.80
April	65,500	11,350	29,813	1,773,997	4.71	4.22
May	14,850	5,970	8,198	504,075	1.34	1.16
June	51,500	5,970	22,216	1,321,944	3.51	3.14
July	39,500	5,565	13,610	836,846	2.23	1.93
August	12,750	4,050	5,147	316,477	0.84	0.73
September	23,100	2,760	6,483	385,765	1.03	0.92
October	23,100	3,100	6,910	424,879	1.13	0.98
November	29,900	3,720	7,673	456,575	1.22	1.09
December	22,300	5,835	11,773	723,894	1.93	1.67
The year	65,500	2,760	14,623	10518566	27.95	2.07

Month.	Discharge in second-feet			Run-off.	
	Maxi-mum.	Mini-mum.	Mean.	Depth in inches.	Second-feet per square mile.
1901.					
January	55,900	8,970	26,089	4.25	3.69
February	41,100	8,970	21,784	3.21	3.08
March	56,700	7,400	20,613	3.37	2.92
April	51,100	14,500	30,616	4.83	4.33
May	40,700	6,670	16,195	2.64	2.29
June	26,100	6,810	12,335	1.95	1.75
July	10,300	4,900	6,535	1.07	0.93
August	44,700	4,400	20,370	3.32	2.88
September	23,100	5,700	9,977	1.57	1.41
October	10,300	4,280	5,694	0.93	0.81
November	4,650	3,830	4,016	0.64	0.57
December	57,100	4,050	18,885	3.08	2.67
The year	57,100	3,830	16,092	30.86	2.28

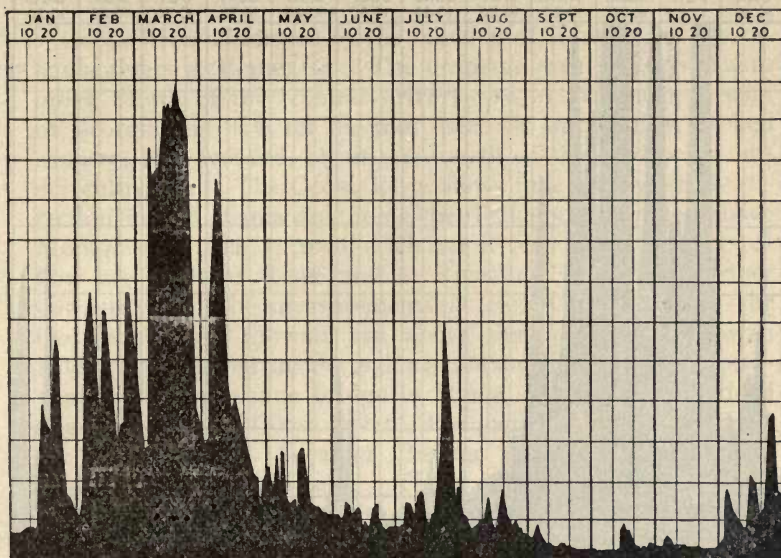


Fig. 9.—Discharge of Coosa River at Riverside, Ala., 1897.

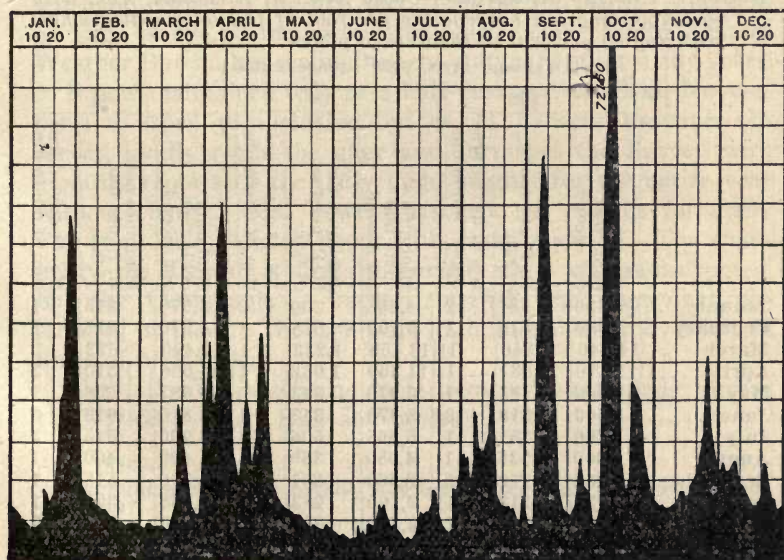


Fig. 10.—Discharge of Coosa River at Riverside, Ala., 1898.

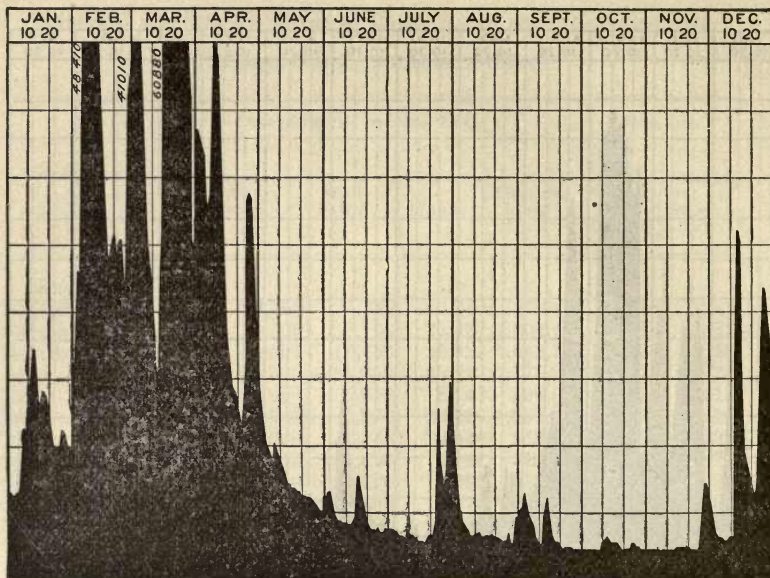


Fig. 11.—Discharge of Coosa River at Riverside, Ala., 1899.

Minimum monthly discharge of Coosa River at Riverside, Ala., with corresponding net horsepower per foot of fall on a water wheel realizing 80 per cent of theoretical power.

[Drainage area, 6,850 square miles.]

	1899			1900			1901		
	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days dura- tion of minimum.	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days dura- tion of minimum.	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days dura- tion of minimum.
January ..	6,390	581	2	4,285	390	2	8,970	815	1
February ..	17,330	1,575	1	5,700	518	1	8,970	815	1
March ...	14,740	1,340	1	13,450	1,223	1	7,400	673	2
April	11,410	1,037	1	11,350	1,032	1	14,500	1,310	2
May	4,900	445	1	5,970	543	5	6,687	608	1
June	3,500	318	3	5,970	543	1	6,810	619	2
July	2,760	251	1	5,565	506	1	4,900	445	3
August	2,600	236	1	4,050	369	1	4,400	400	1
September ..	2,330	212	2	2,760	251	1	5,700	518	1
October ...	2,330	212	11	3,100	282	1	4,285	390	1
November ..	2,395	218	17	3,720	338	1	3,830	348	6
December ..	2,920	265	2	5,835	530	2	4,050	368	1

NOTE.—To find the minimum net horse power available at a shoal on this stream, near this station, for any month, multiply the total fall of the shoal by the "Net H. P. per foot of fall" in this table for that month.

2. COOSA RIVER AT ROME, GEORGIA.

Coosa River is formed by the junction of Etowah and Oostanaula rivers at Rome, Ga. The drainage area is 4,006 square miles. Both of the tributary rivers rise in the northern part of Georgia and flow for the most part through a hilly, broken country, well wooded, about one-fourth of the land being under cultivation. The Coosa River flows in a southwesterly direction into Alabama and joins the Tallapoosa 6 miles above Montgomery, Ala., to form Alabama River. Measurements of flow are made at Rome and at Riverside, 120 miles farther downstream. The measurements at Rome are made on the Oostanaula and Etowah just above their junction. Etowah River is measured at Second avenue bridge and the Oostanaula at Fifth avenue bridge in Rome, and the result added to give the flow of Coosa River. The gage height is taken from the United States Weather Bureau gage at Fifth avenue bridge, on the Oostanaula. There is practically no fall on Oostanaula River from Fifth avenue bridge to the junction, hence the gage is used as Coosa River gage and gives the fluctuations of Coosa River. This gage is a 4 by 6 inch timber, graduated to feet and tenths and fastened to the downstream left-hand corner of the first pier from the left bank. The zero of gage is 575.79 feet above sea level. The United States Weather Bureau has maintained the station here for many years. It is now maintained only as a half-year station, from November 1 to April 30, inclusive, but W. M. Towers, the river observer, kindly reads the gage and furnishes the Survey with monthly reports of the daily gage heights for the entire year without charge. Mr. Towers has kept the records for many years and has predicted floods with great precision. The channel of the Etowah is straight, current swift and unobstructed, but the Oostanaula is rather sluggish and somewhat obstructed by piers. The banks are high, but liable to overflow in times of high water.

The following discharge measurements were made during 1896-97-98 by Max Hall and others:

1896—

September 29: Gage height, 0.20 feet; discharge, 1,209 second-feet.

1897—

May 7: Gage height, 2.75 feet; discharge, 4,646 second-feet.

October 5: Gage height, 0.15 feet; discharge, 990 second-feet.

1898—

May 11: Gage height, 1.90 feet; discharge, 2,946 second-feet.

September 17: Gage height, 2.60 feet; discharge, 3,913 second-feet.

October 11: Gage height, 5.05 feet; discharge, 8,324 second-feet.

October 22: Gage height, 4.10 feet; discharge, 6,489 second-feet.

November 30: Gage height, 3.90 feet; discharge, 6,039 second-feet.

Daily gage height, in feet, of Coosa River at Rome, Ga., for 1897...

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	1.0	2.8	3.3	7.1	4.1	1.8	1.7	0.8	1.0	0.0	0.5	1.1
2.....	1.0	9.7	3.2	7.5	4.0	2.3	1.9	.7	.5	0.0	.9	1.0
3.....	1.0	11.5	3.1	8.2	3.5	2.0	1.0	1.2	.3	0.0	1.0	1.2
4.....	1.0	9.6	3.3	9.4	3.3	3.0	0.9	1.0	.5	.1	1.0	2.3
5.....	1.0	8.2	3.5	14.8	3.0	2.4	2.0	.8	.4	.1	1.0	3.2
6.....	1.3	5.2	7.6	18.9	3.0	2.0	1.9	.8	.3	.1	.8	3.7
7.....	1.1	5.0	19.7	17.0	3.0	2.0	1.9	1.9	.3	.1	.8	3.2
8.....	1.1	4.3	18.9	14.7	2.8	2.0	3.0	2.0	.2	.1	.8	2.2
9.....	1.0	5.0	15.4	12.1	2.6	2.0	2.1	2.0	.1	.1	.8	1.9
10.....	1.0	4.4	13.5	9.6	2.6	1.9	1.9	1.6	.0	.1	.7	1.7
11.....	.9	4.5	12.0	7.2	2.6	1.9	2.5	2.4	.0	.1	.7	1.5
12.....	.9	7.4	11.5	6.2	3.0	1.9	2.8	1.8	.0	1.1	.7	1.4
13.....	.9	8.7	18.6	5.8	3.4	1.8	2.0	1.3	.0	1.6	.7	1.3
14.....	2.8	7.2	21.3	5.9	4.0	1.7	1.6	.8	.0	1.3	.6	2.2
15.....	6.2	5.5	23.8	6.0	5.9	1.7	1.3	.6	.0	1.0	.0	4.0
16.....	5.0	4.5	23.4	7.4	4.0	2.0	1.0	.6	.0	.8	.6	3.5
17.....	3.5	4.0	22.6	7.0	3.3	2.8	5.2	2.1	.0	.7	.6	2.5
18.....	3.9	3.7	21.4	5.0	2.8	2.3	4.2	3.2	.1	.6	.6	2.2
19.....	5.0	3.4	19.7	4.5	2.7	2.0	4.8	2.4	.2	.6	.6	1.8
20.....	3.5	3.9	18.9	4.0	2.6	1.8	8.8	1.4	.2	.6	.3	1.7
21.....	8.7	4.0	17.7	3.	2.5	1.6	12.8	1.3	.2	1.5	.6	3.2
22.....	9.5	3.9	15.3	3.7	2.4	1.5	7.3	1.5	.2	1.3	.5	4.1
23.....	5.7	5.6	13.7	3.5	2.4	1.5	4.4	1.5	.2	1.0	.5	5.8
24.....	4.0	11.7	12.9	3.5	2.4	1.4	3.9	1.5	.2	.8	.5	5.3
25.....	3.5	8.6	9.1	3.5	2.3	1.3	2.6	1.1	.3	.8	.5	3.7
26.....	3.0	6.7	6.0	3.5	2.2	1.2	2.6	.8	.3	.7	.5	2.8
27.....	2.5	4.7	5.2	3.4	2.1	1.2	3.8	.5	.4	.7	.5	3.0
28.....	2.5	3.5	4.8	3.4	2.0	1.0	3.0	.4	.4	.7	.9	2.8
29.....	2.5	.....	4.5	3.4	2.0	1.1	2.4	.4	.4	.6	1.1	2.3
30.....	2.3	.....	4.2	3.2	1.9	2.0	1.4	.4	.4	.5	1.1	2.0
31.....	4.2	.....	4.0	.....	1.9	...	1.2	.5	.....	.5	.....	2.0

Daily gage height in feet, of Coosa River, at Rome, Ga., for 1898.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	1.8	3.6	1.2	9.0	2.8	1.4	1.2	4.8	2.0	2.0	2.2	4.2
2.....	1.8	3.1	1.1	6.1	2.6	1.4	1.0	4.4	7.8	2.0	2.2	4.0
3.....	1.7	2.8	1.2	4.2	2.4	1.4	1.0	3.2	21.7	2.0	2.2	3.8
4.....	1.7	2.6	1.2	3.6	2.3	1.4	1.0	4.4	24.3	4.9	2.2	3.8
5.....	1.6	2.4	1.2	9.9	2.2	1.3	1.0	8.0	22.2	22.0	2.0	4.3
6.....	1.6	2.2	1.2	17.2	2.1	1.3	1.3	5.6	20.0	23.8	2.2	5.0
7.....	1.3	2.0	1.2	14.5	2.0	1.3	2.0	4.4	17.6	19.0	2.6	4.3
8.....	1.3	1.8	1.2	10.9	2.0	1.3	2.8	4.4	16.4	18.4	2.4	4.0
9.....	1.3	1.8	1.2	7.0	2.0	1.3	3.2	3.4	9.7	16.6	2.3	3.7
10.....	1.3	1.7	1.2	4.1	2.0	1.3	1.7	3.0	5.0	14.0	2.1	3.4
11.....	1.4	1.5	1.2	4.0	2.0	1.3	2.8	9.9	5.4	5.6	2.0	3.3
12.....	2.0	1.5	1.2	3.8	1.9	1.2	2.0	7.2	4.6	4.2	2.0	3.3
13.....	4.0	1.3	1.2	3.6	1.8	1.4	1.8	4.2	3.8	3.8	2.0	3.2
14.....	4.0	1.3	1.3	3.5	1.8	1.8	1.6	3.4	3.2	3.7	2.3	3.0
15.....	3.8	1.3	1.6	3.5	1.7	1.8	3.7	3.0	3.0	3.5	2.3	3.0
16.....	3.6	1.3	3.7	3.4	1.6	1.7	3.7	2.5	2.9	3.2	2.9	2.8
17.....	3.6	1.2	7.3	3.0	1.5	1.8	2.2	2.0	2.7	3.1	2.9	2.7
18.....	3.2	1.2	5.8	3.0	1.5	1.8	1.9	2.2	2.5	6.5	4.0	2.6
19.....	2.8	1.2	3.7	3.0	1.5	2.2	1.7	2.2	2.3	9.0	5.0	2.6
20.....	4.4	1.2	3.0	3.6	1.4	3.6	1.6	3.2	2.2	6.0	4.5	2.6
21.....	6.5	1.2	2.5	3.6	1.4	3.2	1.5	2.8	2.2	4.2	5.0	2.8
22.....	6.4	1.2	2.5	3.2	1.4	3.0	1.4	3.9	2.3	3.9	4.0	2.9
23.....	5.0	1.2	2.3	3.0	1.4	2.8	1.3	2.2	2.6	4.0	5.0	3.2
24.....	4.5	1.2	2.2	7.2	1.4	2.6	1.8	2.2	4.1	3.9	7.0	3.6
25.....	7.0	1.2	2.1	8.2	1.4	2.0	3.7	1.9	3.1	3.5	4.7	3.0
26.....	14.0	1.2	2.0	6.0	1.4	1.8	3.8	2.7	3.0	3.3	3.9	2.9
27.....	14.6	1.2	1.9	4.6	1.4	1.8	2.9	4.0	2.7	3.1	4.5	2.7
28.....	11.6	1.2	1.8	4.0	1.4	1.8	3.7	4.4	2.5	3.0	4.3	2.6
29.....	8.6	.....	2.0	3.7	1.4	1.6	4.2	3.4	2.3	2.8	4.3	2.5
30.....	4.6	.....	8.5	3.2	1.4	1.4	4.1	2.0	2.1	2.6	3.9	2.4
31.....	3.9	.....	11.4	.....	1.4	...	4.2	2.3	.....	2.4	.....	2.4

Rating table for Coosa River at Rome, Ga., for 1897 and 1898.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.
-0.15	990	2.5	3,760	5.1	8,445	7.7	13,515
0.0	1,070	2.6	3,910	5.2	8,640	7.8	13,710
0.1	1,140	2.7	4,060	5.3	8,835	7.9	13,905
0.2	1,210	2.8	4,220	5.4	9,030	8.0	14,100
0.3	1,280	2.9	4,380	5.5	9,225	8.1	14,295
0.4	1,360	3.0	4,540	5.6	9,420	8.2	14,490
0.5	1,440	3.1	4,700	5.7	9,615	8.3	14,685
0.6	1,520	3.2	4,860	5.8	9,810	8.4	14,880
0.7	1,610	3.3	5,020	5.9	10,005	8.5	15,075
0.8	1,700	3.4	5,180	6.0	10,200	8.6	15,270
0.9	1,800	3.5	5,340	6.1	10,395	8.7	15,465
1.0	1,900	3.6	5,520	6.2	10,590	8.8	15,660
1.1	2,000	3.7	5,715	6.3	10,785	8.9	15,855
1.2	2,110	3.8	5,910	6.4	10,980	9.0	16,050
1.3	2,220	3.9	6,105	6.5	11,175	10.0	18,000
1.4	2,330	4.0	6,300	6.6	11,370	11.0	19,950
1.5	2,450	4.1	6,495	6.7	11,565	12.0	21,900
1.6	2,570	4.2	6,690	6.8	11,760	13.0	23,850
1.7	2,690	4.3	6,885	6.9	11,955	14.0	25,800
1.8	2,810	4.4	7,080	7.0	12,150	15.0	27,750
1.9	2,930	4.5	7,275	7.1	12,345	16.0	29,700
2.0	3,060	4.6	7,470	7.2	12,540	17.0	31,650
2.1	3,190	4.7	7,665	7.3	12,735	18.0	33,600
2.2	3,320	4.8	7,860	7.4	12,930	20.0	37,500
2.3	3,460	4.9	8,055	7.5	13,125	22.0	41,400
2.4	3,610	5.0	8,250	7.6	13,320	24.0	45,300

NOTE.—This table applied to the foregoing "Daily gage heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.

The following discharge measurements were made during 1899 by Max Hall and others:

January 25—Gage height, 3.80 feet; discharge, 6,540 second-feet.

January 25—Gage height, 3.60 feet; discharge, 5,932 second-feet.

May 19—Gage height, 2.75 feet; discharge, 4,394 second-feet.

June 16—Gage height, 2.40 feet; discharge, 3,352 second-feet.

August 4—Gage height, 1.45 feet; discharge, 2,835 second-feet.

October 13—Gage height, 0.60 foot; discharge, 1,769 second-feet.

Daily gage height, in feet, of Coosa River, at Rome, Georgia, for 1899.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	3.00	6.90	19.70	13.20	4.00	3.00	1.70	2.20	3.40	0.40	0.7	1.1
2.....	3.40	7.80	15.00	10.60	3.70	2.60	1.50	1.90	2.00	.30	.6	1.1
3.....	3.00	6.00	8.60	7.90	3.70	2.60	1.00	1.70	1.60	.30	.5	1.5
4.....	2.70	9.20	6.60	7.20	3.50	2.00	.90	1.50	1.40	.30	.5	1.3
5.....	2.60	15.30	7.80	9.50	3.50	2.00	2.00	1.40	1.30	.30	.4	1.1
6.....	2.60	18.20	9.00	8.20	3.50	2.00	1.90	1.50	1.30	.50	.4	1.0
7.....	3.60	27.80	8.00	8.20	3.70	2.00	1.90	1.60	1.20	.70	.3	.9
8.....	5.90	24.00	6.80	15.00	3.70	1.90	3.00	1.50	1.00	.70	.3	.8
9.....	5.90	22.40	5.70	13.40	3.60	1.80	2.10	1.80	1.00	.80	.3	.8
10.....	4.90	21.00	5.40	11.20	3.50	1.80	1.90	1.60	1.00	.60	.3	.8
11.....	4.00	19.00	5.20	9.50	3.30	1.80	2.50	1.40	2.90	1.00	.3	.8
12.....	4.50	16.50	4.90	7.00	3.10	2.20	2.80	1.40	2.30	.90	.3	2.8
13.....	4.00	7.00	4.50	6.40	3.10	3.80	2.00	1.20	1.50	.70	.3	6.1
14.....	3.80	5.00	6.00	5.90	3.00	4.00	1.60	1.10	1.00	.70	.4	5.0
15.....	3.60	5.00	16.60	5.60	3.00	3.50	1.30	1.30	.90	.60	.4	3.2
16.....	3.60	5.50	27.70	5.40	2.90	2.50	1.80	1.90	.80	.60	.5	2.0
17.....	4.00	8.90	29.20	5.20	2.80	2.10	5.20	1.60	.60	.60	.9	1.8
18.....	4.20	9.50	25.80	4.80	2.80	2.00	4.20	1.40	.60	.60	.7	1.7
19.....	4.00	8.50	24.90	4.70	2.80	2.00	4.80	1.10	.60	.60	.5	1.3
20.....	3.70	7.70	26.20	4.60	2.80	2.00	8.80	.90	.70	.60	.5	1.6
21.....	3.30	6.80	24.60	4.30	2.60	1.80	12.80	.30	.70	.70	.5	2.0
22.....	3.20	6.90	23.00	4.10	2.60	2.20	7.90	.80	.60	.70	.4	2.0
23.....	3.10	7.30	22.60	4.00	2.40	1.70	4.80	.80	.60	.60	1.0	1.8
24.....	3.50	6.60	21.90	5.40	2.60	1.70	3.90	.70	.50	.50	2.1	7.2
25.....	3.80	5.80	18.00	7.40	2.50	1.70	2.60	.70	.50	.40	1.5	7.5
26.....	3.80	5.50	10.50	9.10	2.40	1.70	2.60	.70	.50	.40	2.5	5.0
27.....	3.30	19.10	7.70	6.70	2.20	2.10	3.80	2.50	.50	.40	3.0	3.5
28.....	3.00	23.40	6.80	5.50	2.20	1.90	3.00	2.50	.60	.40	2.2	3.0
29.....	3.00	.....	8.80	4.80	2.00	1.90	2.40	2.50	.50	.40	1.9	3.0
30.....	2.90	.....	9.30	4.20	2.00	1.80	1.40	2.00	.40	.50	1.4	3.4
31.....	4.40	.....	10.20	.....	3.30	.....	1.20	2.50	.....	.80	.....	2.0

Rating table for Coosa River at Rome, Georgia, for 1899.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.
1.0	2,030	8.1	14,941	15.9	30,619	23.0	44,890
1.1	2,124	8.2	15,142	16.0	30,820	23.1	45,091
1.2	2,218	9.0	16,750	16.1	31,021	23.2	45,292
1.3	2,312	9.1	16,951	16.2	31,222	23.3	45,493
1.4	2,406	9.2	17,152	16.3	31,423	23.4	45,694
1.5	2,500	9.3	17,353	16.4	31,624	23.5	45,895
1.6	2,620	9.4	17,554	16.5	31,825	23.6	46,096
1.7	2,740	9.5	17,755	16.6	32,026	23.7	46,297
1.8	2,860	9.6	17,956	16.7	32,227	23.8	46,498
1.9	2,980	9.7	18,157	16.8	32,428	23.9	46,699
2.0	3,100	9.8	18,358	16.9	32,629	24.0	46,900
2.1	3,260	9.9	18,559	17.0	32,830	24.1	47,101
2.2	3,420	10.0	18,760	17.1	33,031	24.2	47,302
2.3	3,580	10.1	18,961	17.2	33,232	24.3	47,503
2.4	3,740	10.2	19,162	17.3	33,433	24.4	47,704
2.5	3,900	10.3	19,363	17.4	33,634	24.5	47,905
2.6	4,060	10.4	19,564	17.5	33,835	24.6	48,106
2.7	4,220	10.5	19,765	17.6	34,036	24.7	48,307
2.8	4,380	10.6	19,966	17.7	34,237	24.8	48,508
2.9	4,540	10.7	20,167	17.8	34,438	24.9	48,709
3.0	4,700	10.8	20,368	17.9	34,639	25.0	48,910
3.1	4,900	10.9	20,569	18.0	34,840	25.1	49,111
3.2	5,100	11.0	20,770	18.1	35,041	25.2	49,312
3.3	5,300	11.1	20,971	18.2	35,242	25.3	49,513
3.4	5,500	11.2	21,172	18.3	35,443	25.4	49,714
3.5	5,700	11.3	21,373	18.4	35,644	25.5	49,915
3.6	5,900	11.4	21,574	18.5	35,845	25.6	50,116
3.7	6,100	11.5	21,775	18.6	36,046	25.7	50,317
3.8	6,300	11.6	21,976	18.7	36,247	25.8	50,518
3.9	6,500	11.7	22,177	18.8	36,448	25.9	50,719
4.0	6,700	11.8	22,378	18.9	36,649	26.0	50,920
4.1	6,901	11.9	22,579	19.0	36,850	26.1	51,121
4.2	7,102	12.0	22,780	19.1	37,051	26.2	51,322
4.3	7,303	12.1	22,981	19.2	37,252	26.3	51,523
4.4	7,504	12.2	23,182	19.3	37,453	26.4	51,724
4.5	7,705	12.3	23,383	19.4	37,654	26.5	51,925
4.6	7,906	12.4	23,584	19.5	37,855	26.6	52,126
4.7	8,107	12.5	23,785	19.6	38,056	26.7	52,327
4.8	8,308	12.6	23,986	19.7	38,257	26.8	52,528
4.9	8,509	12.7	24,187	19.8	38,458	26.9	52,729
5.0	8,710	12.8	24,388	19.9	38,659	27.0	52,930
5.1	8,911	12.9	24,589	20.0	38,860	27.1	53,131
5.2	9,112	13.0	24,790	20.1	39,061	27.2	53,332
5.3	9,313	13.1	24,991	20.2	39,262	27.3	53,533
5.4	9,514	13.2	25,192	20.3	39,463	27.4	53,734

Rating table for Coosa River at Rome, Ga., for 1899.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.
5.5	9,715	13.3	25,393	20.4	39,664	27.5	53,935
5.6	9,916	13.4	25,594	20.5	39,865	27.6	54,136
5.7	10,117	13.5	25,795	20.6	40,066	27.7	54,337
5.8	10,318	13.6	25,996	20.7	40,267	27.8	54,538
5.9	10,519	13.7	26,197	20.8	40,468	27.9	54,739
6.0	10,720	13.8	26,398	20.9	40,669	28.0	54,940
6.1	10,921	13.9	26,599	21.0	40,870	28.1	55,141
6.2	11,122	14.0	26,800	21.1	41,071	28.2	55,342
6.3	11,323	14.1	27,001	21.2	41,272	28.3	55,543
6.4	11,524	14.2	27,202	21.3	41,473	28.4	55,744
6.5	11,725	14.3	27,403	21.4	41,674	28.5	55,945
6.6	11,926	14.4	27,604	21.5	41,875	28.6	56,146
6.7	12,127	14.5	27,805	21.6	42,076	28.7	56,347
6.8	12,328	14.6	28,006	21.7	42,277	28.8	56,548
6.9	12,529	14.7	28,207	21.8	42,478	28.9	56,749
7.0	12,730	14.8	28,408	21.9	42,679	29.0	56,950
7.1	12,931	14.9	28,609	22.0	42,880	29.1	57,151
7.2	13,132	15.0	28,810	22.1	43,081	29.2	57,352
7.3	13,333	15.1	29,011	22.2	43,282	29.3	57,553
7.4	13,534	15.2	29,212	22.3	43,483	29.4	57,754
7.5	13,735	15.3	29,413	22.4	43,684	29.5	57,955
7.6	13,936	15.4	29,614	22.5	43,885	29.6	58,156
7.7	14,137	15.5	29,815	22.6	44,086	29.7	58,357
7.8	14,338	15.6	30,016	22.7	44,287	29.8	58,558
7.9	14,539	15.7	30,217	22.8	44,488	29.9	58,759
8.0	14,740	15.8	30,418	22.9	44,689	30.0	58,960

The following discharge measurements were made during 1900 by Max Hall and others:

Feb. 21—Gage height, 4.80 feet; discharge, 8,115 second-feet.

May 19—Gage height, 2.30 feet; discharge, 4,496 second-feet.

Sept. 13—Gage height, 0.90 foot; discharge, 1,992 second-feet.

Dec. 8—Gage height, 3.73 feet; discharge, 6,066 second-feet.

Daily gage height, in feet, of Coosa River, at Rome, Georgia, for 1900.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	2.0	2.0	4.2	4.4	6.2	2.4	10.5	3.4	1.5	1.2	2.1	3.2
2.....	1.6	1.8	5.8	4.2	4.8	2.5	8.0	3.2	1.5	1.2	2.2	2.8
3.....	1.5	1.6	5.6	4.0	4.0	2.8	8.0	3.0	1.7	1.0	2.0	2.6
4.....	1.5	2.0	4.4	4.0	4.0	4.2	7.0	2.8	1.7	1.0	2.3	3.5
5.....	1.5	3.0	4.1	4.0	3.8	4.2	5.5	2.6	1.5	.9	2.3	7.4
6.....	1.5	3.8	3.8	4.0	3.7	4.2	4.2	2.5	1.5	.9	2.1	6.8
7.....	1.5	2.8	5.0	3.8	3.6	4.8	3.8	2.2	1.4	.9	2.1	5.2
8.....	1.5	2.4	8.2	3.8	3.4	13.0	3.8	2.2	1.0	3.8	2.0	3.8
9.....	1.5	4.0	15.0	3.6	3.0	12.6	4.0	2.0	1.0	5.9	1.9	3.6
10.....	1.5	6.9	13.4	3.5	3.0	8.0	4.9	2.0	.8	2.6	1.8	3.2
11.....	2.0	7.0	10.3	6.0	3.0	5.9	3.8	1.8	.8	2.0	1.8	2.8
12.....	7.0	6.4	7.5	11.0	3.0	5.0	3.4	1.8	.8	1.8	1.6	2.6
13.....	9.0	22.6	5.5	7.4	2.5	5.2	3.8	1.8	.8	2.5	1.5	2.6
14.....	7.2	27.2	4.8	5.5	2.4	5.3	3.4	1.7	.8	3.2	1.5	2.4
15.....	5.5	25.3	4.2	4.5	2.4	4.2	3.4	2.0	6.5	3.0	1.5	2.2
16.....	3.5	21.2	5.3	5.6	2.4	3.8	3.3	1.7	11.1	2.0	1.5	2.2
17.....	3.0	18.0	5.6	6.2	2.4	4.8	3.1	1.6	7.0	1.6	1.5	2.2
18.....	2.9	10.7	4.5	11.0	2.4	6.0	3.0	1.8	3.2	1.5	1.4	2.0
19.....	5.0	5.0	5.2	11.1	2.9	6.5	2.8	2.2	2.3	1.5	1.4	2.0
20.....	11.3	4.0	15.9	11.4	3.0	7.2	2.6	2.0	2.0	1.4	1.6	2.8
21.....	10.6	4.1	17.5	13.6	2.6	4.2	2.5	1.6	1.8	1.8	1.8	6.7
22.....	8.5	6.8	14.6	12.7	2.5	3.6	2.4	1.6	1.8	1.8	2.1	8.0
23.....	5.8	7.6	10.4	10.5	2.3	5.5	2.4	1.6	1.6	1.6	2.1	7.0
24.....	4.0	6.0	7.2	8.6	2.9	14.2	2.4	1.9	1.6	1.6	2.0	6.6
25.....	3.4	5.8	8.8	8.5	3.2	18.2	3.6	2.4	1.5	1.5	5.0	6.6
26.....	3.1	5.2	13.0	6.5	2.7	17.0	2.8	2.0	1.5	1.5	11.0	5.6
27.....	2.8	4.6	12.1	5.3	2.6	15.5	6.2	1.8	1.4	1.4	11.5	4.0
28.....	2.6	4.0	8.9	4.8	2.5	15.6	6.8	1.6	1.4	2.2	8.6	3.8
29.....	2.4	.....	5.8	4.3	2.4	14.2	6.2	1.5	1.3	2.2	7.0	3.6
30.....	2.1	.....	5.7	6.0	2.9	10.0	4.5	1.5	1.3	2.1	4.0	3.5
31.....	2.0	.....	5.3	.....	3.0	.....	4.0	1.5	.....	2.1	.....	5.6

The following discharge measurements were made during 1901 by Max Hall and others:

Jan. 23—Gage height, 3.60 feet; discharge, 6,454 second-feet.
 April 5—Gage height, 9.90 feet; discharge, 16,692 second-feet.
 June 22—Gage height, 3.70 feet; discharge, 6,030 second-feet.
 Oct. 15—Gage height, 3.15 feet; discharge, 5,388 second-feet.

77

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.4	6.4	3.0	8.8	4.0	10.6	3.6	1.8	6.4	2.6	1.2	1.3
2	6.4	5.8	3.0	8.6	3.8	7.6	3.0	1.8	5.8	2.6	1.2	1.1
3	5.2	5.5	3.0	13.0	3.8	5.6	3.0	1.8	3.7	3.2	1.2	1.3
4	4.2	15.8	3.0	13.0	3.8	6.4	2.6	1.6	3.4	3.0	1.2	1.5
5	4.0	18.5	3.0	10.0	3.6	5.0	2.4	1.6	3.0	2.8	1.2	2.0
6	3.8	13.8	3.0	7.9	3.5	4.0	2.2	2.6	2.9	2.2	1.2	1.8
7	3.5	9.5	3.0	6.4	3.5	7.0	5.2	5.3	2.6	2.0	1.2	1.8
8	3.2	6.5	3.0	5.6	3.4	7.6	4.8	5.9	2.2	1.9	1.1	1.8
9	3.0	9.6	2.8	5.2	3.7	5.4	3.3	3.0	2.0	1.9	1.1	1.8
10	2.8	12.5	5.5	4.5	3.1	4.3	2.6	2.6	2.0	1.8	1.1	1.8
11	8.8	10.5	7.8	4.3	3.0	4.0	2.4	2.5	2.0	1.7	1.0	2.6
12	23.5	7.6	8.0	4.2	2.9	3.8	2.3	3.4	2.0	1.6	1.0	2.6
13	27.0	6.5	6.7	4.3	2.8	3.8	2.0	3.0	1.8	1.8	1.0	2.1
14	23.8	5.6	4.8	10.4	2.8	4.0	2.0	2.3	2.0	2.0	1.0	2.2
15	21.4	5.0	4.0	10.1	2.7	4.3	2.0	4.5	3.0	3.2	1.0	16.4
16	19.8	4.8	3.6	7.7	2.6	6.9	1.9	7.2	2.4	2.6	1.0	17.6
17	17.4	4.2	3.2	5.8	2.6	6.0	1.7	10.5	6.0	2.4	1.0	14.7
18	8.9	4.2	3.0	5.2	2.5	5.0	5.5	9.8	11.2	2.4	1.0	14.0
19	5.0	4.2	3.0	9.0	2.5	4.8	3.0	10.8	11.1	2.0	1.0	13.0
20	4.0	4.0	3.0	18.6	3.0	4.0	3.0	12.5	7.0	1.8	1.0	5.6
21	3.8	3.8	3.0	17.2	10.0	3.8	2.4	10.8	3.9	1.8	1.6	3.0
22	3.8	3.7	3.0	15.5	23.6	3.6	2.4	14.5	3.7	1.6	1.2	2.0
23	3.8	3.6	3.0	14.6	26.4	3.6	2.4	20.8	3.3	1.6	1.4	2.0
24	3.8	3.6	3.6	12.7	21.8	3.6	2.0	23.2	2.8	1.6	1.4	3.6
25	6.7	3.5	3.6	6.8	18.9	2.7	2.0	18.3	2.6	1.6	1.3	4.0
26	6.6	3.2	22.0	5.6	16.5	2.7	1.9	13.1	2.5	1.4	1.3	3.7
27	5.4	3.2	27.0	4.8	11.1	3.2	1.7	6.6	2.3	1.3	1.3	5.7
28	5.2	3.0	24.5	4.4	5.5	3.0	2.8	8.8	2.0	1.3	1.3	6.0
29	5.0	.....	21.3	4.2	4.9	3.6	1.9	7.5	2.0	1.3	1.3	21.5
30	4.6	.....	19.2	4.1	4.7	3.6	1.9	6.2	2.5	1.3	1.3	29.8
31	6.8	.....	16.1	.....	5.4	.....	1.6	5.6	.....	1.2	.....	32.2

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
<i>Feet.</i>	<i>Second ft.</i>	<i>Feet.</i>	<i>Second ft.</i>	<i>Feet.</i>	<i>Second ft.</i>	<i>Feet</i>	<i>Second ft.</i>
0.8	1,930	1.6	2,850	2.4	4,000	3.2	5,230
0.9	2,020	1.7	2,985	2.5	4,150	3.3	5,405
1.0	2,110	1.8	3,120	2.6	4,300	3.4	5,580
1.1	2,230	1.9	3,260	2.7	4,450	3.5	5,755
1.2	2,350	2.0	3,400	2.8	4,600	*3.6	5,930
1.3	2,475	2.1	3,550	2.9	4,750		
1.4	2,600	2.2	3,700	3.0	4,900		
1.5	2,725	2.3	3,850	3.1	5,065		

*Above 3.6 ft. gage height, the rating for 1900-1901 is the same as for 1899.

Estimated monthly discharge of Coosa River at Rome, Ga.
 [Drainage area, 4,006 square miles.]

Month.	Discharge in second-feet.			Total in acre-ft.	Run-off.	
	Maxi-mum.	Mini-mum.	Mean.		Depth in inches.	Second-ft. per sq. mile.
1897.						
January	17,025	1,800	4,820	296,372	1.38	1.20
February	20,925	4,220	10,100	560,926	2.62	2.52
March	44,910	4,700	22,537	1,385,755	6.49	5.63
April	35,150	4,860	12,304	732,137	3.43	3.07
May	8,250	2,930	4,421	271,838	1.27	1.10
June	4,540	1,900	2,884	171,610	0.80	0.72
July	23,460	1,800	5,184	318,754	1.50	1.30
August	4,860	1,360	2,256	138,717	0.64	0.56
September	1,900	900	1,106	65,811	0.31	0.28
October	2,570	1,010	1,518	93,339	0.44	0.38
November	2,000	1,440	1,626	96,754	0.46	0.41
December	9,810	1,900	4,086	251,240	1.18	1.02
1898.						
January	26,970	2,220	7,272	447,138	2.10	1.82
February	5,520	2,110	2,705	150,228	0.71	0.68
March	20,730	2,110	4,384	269,563	1.27	1.10
April	32,040	4,540	9,430	561,123	2.63	2.36
May	4,220	2,330	2,778	170,814	0.79	0.69
June	5,520	2,110	2,866	170,538	0.80	0.72
July	6,690	1,900	3,670	225,661	10.59	9.17
August	17,805	2,930	6,079	373,786	1.75	1.52
September	45,885	3,060	12,114	720,832	2.26	3.03
October	44,910	3,060	11,830	727,403	3.41	2.96
November	12,150	3,060	5,213	310,194	1.45	1.30
December	8,250	3,610	4,996	307,194	1.44	1.25
1899.						
January	10,519	4,060	6,092	374,582	1.75	1.52
February	54,538	8,710	22,536	1,251,586	5.85	5.62
March	57,352	7,705	26,314	1,617,985	7.57	6.57
April	28,810	6,700	13,333	793,369	3.72	3.33
May	6,700	3,100	4,783	294,095	1.37	1.19
June	6,700	2,740	3,489	207,610	0.97	0.87
July	24,388	1,950	5,499	338,120	1.58	1.37
August	3,900	1,790	2,595	159,560	0.75	0.65
September	5,500	1,550	2,219	132,040	0.61	0.55
October	2,030	1,470	1,684	103,545	0.48	0.42
November	4,700	1,470	2,009	119,544	0.56	0.50
December	13,735	1,870	4,314	265,258	1.25	1.08

Estimated monthly discharge of Coosa River at Rome, Georgia.

[Drainage area, 4,006 square miles.]

Month.	Discharge in second-feet.			Total in acre-feet.	Run-off.	
	Maxi-mum.	Mini-mum.	Mean		Depth in inches.	Second-ft. per sq. mile.
1900.						
January	21,373	2,725	6,854	421,436	1.97	1.71
February	53,332	2,850	14,736	818,396	3.83	3.68
March	33,835	6,300	14,714	904,728	4.33	3.67
April	25,996	5,755	12,050	717,025	3.36	3.01
May	11,122	3,850	5,129	315,370	1.48	1.28
June	35,242	4,000	14,154	842,222	3.94	3.53
July	19,765	4,000	7,589	466,629	2.18	1.89
August	5,580	2,725	3,488	214,469	1.00	0.87
September	20,971	1,930	3,960	235,636	1.10	0.99
October	10,519	2,010	3,408	209,550	0.98	0.85
November	21,775	2,600	5,438	323,583	1.52	1.36
December	14,740	3,400	7,096	436,316	2.04	1.77
The year	53,332	1,930	8,218	5,905,360	27.73	2.05

Estimated monthly discharge of Coosa River at Rome, Ga.

[Drainage area, 4,006 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maxi-mum.	Mini-mum.	Mean.	Depth in inches.	Second-feet per square mile.
1901.					
January	52,930	4,600	15,450	4.45	3.86
February	35,845	4,900	12,186	3.17	3.04
March	52,930	4,600	13,406	3.85	3.34
April	36,046	6,901	15,578	4.33	3.88
May	51,724	4,150	12,533	3.60	3.12
June	19,966	4,450	8,316	2.32	2.08
July	9,715	2,850	4,441	1.27	1.10
August	45,292	2,850	13,780	3.97	3.44
September	21,172	3,120	6,389	1.77	1.59
October	5,230	2,350	3,414	.98	.85
November	2,850	2,110	2,316	.65	.58
December	64,186	2,475	13,428	3.86	3.35
The year	64,186	2,110	10,103	34.22	2.52

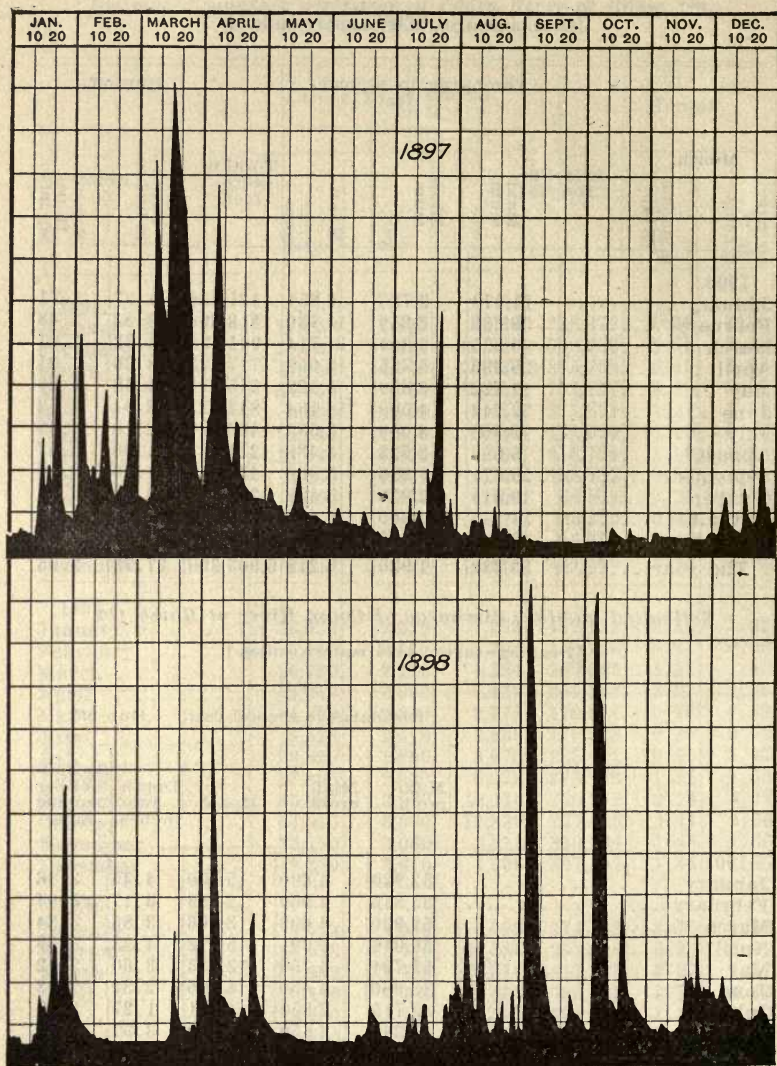


Fig. 12—Discharge of Coosa River at Rome, Ga., 1897 and 1898.

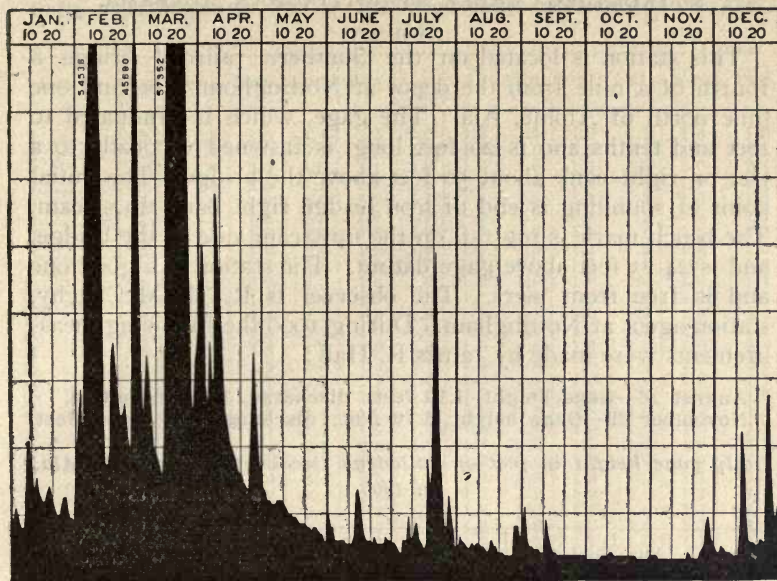


Fig. 13—Discharge of Coosa River at Rome, Ga., 1899.

Minimum monthly discharge of Coosa River at Rome, Ga., with corresponding net horse-power per foot of fall on a water wheel realizing 80 per cent. of the theoretical power.

	1899			1900			1901		
	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.
January ..	4,060	369	2	2,725	248	8	4,600	418	1
February ..	8,710	792	2	2,850	259	1	4,900	445	1
March	7,705	700	1	6,300	573	1	4,600	418	1
April	6,700	609	1	5,755	523	1	6,901	627	1
May	3,100	282	2	3,850	350	1	4,150	377	2
June	2,740	249	4	4,000	364	1	4,450	405	2
July	1,950	177	1	4,000	364	3	2,850	259	1
August ...	1,790	163	3	2,725	248	3	2,850	259	2
September ..	1,550	141	1	1,930	175	5	3,120	284	1
October ...	1,470	134	4	2,010	183	3	2,350	214	1
November ..	1,470	134	7	2,600	236	2	2,110	192	10
December ..	1,870	170	4	3,400	309	2	2,475	225	3

NOTE.—To find the minimum net horse power available at a shoal on this stream, near this station, for any month, multiply the total fall of the shoal by the "Net H. P. per foot of fall" in this table for that month.

3. TALLADEGA CREEK AT NOTTINGHAM, ALABAMA.

This station is located on the Southern railroad bridge a fourth of a mile from the depot at Nottingham, Ala, and one mile north of Alpine, Ala. The gage, which is graduated to feet and tenths and is 20 feet long, is fastened vertically to a tree on right bank about 50 feet above the bridge. The initial point of sounding is end of iron bridge right bank up stream. The bench mark is top rail on the upstream side of the bridge, and is 24.13 feet above gage datum. The station is a good one and is free from piers. The observer is R. M. McClatchy, station agent at Nottingham. During 1900 the following measurements were made by James R. Hall:

August 16—Gage height, 1.10 feet; discharge, 102 second-feet.

November 29—Gage height, 1.70 feet; discharge, 240 second-feet.

Daily gage height in feet of Talladega Creek at Nottingham, Ala., for 1900.

Day.	Aug.	Sept.	Oct.	Nov.	Dec.	Day.	Aug.	Sept.	Oct.	Nov.	Dec.
1.....		1.2	1.0	1.3	1.6	17.....	1.2	2.3	1.1	1.2	1.5
2.....		2.0	1.0	1.3	1.4	18.....	1.2	1.7	1.1	1.2	1.5
3.....		1.3	1.0	2.3	1.4	19.....	1.1	1.6	1.1	1.2	1.5
4.....		1.1	1.0	2.1	1.8	20.....	1.1	1.5	1.0	1.5	2.7
5.....		1.0	1.2	1.7	1.7	21.....	1.1	1.3	1.2	2.2	3.0
6.....		1.0	1.3	1.5	1.6	22.....	1.1	1.2	1.4	1.9	2.6
7.....		1.0	1.3	1.4	1.5	23.....	1.1	1.2	1.6	1.8	4.0
8.....		.9	1.4	1.4	1.5	24.....	1.0	1.2	2.9	1.6	2.5
9.....		11.0	1.3	1.3	1.4	25.....	.9	1.2	3.5	3.9	2.1
10.....		8.0	1.3	1.3	1.3	26.....	1.0	1.2	3.0	3.8	2.0
11.....		10.3	1.3	1.3	1.3	27.....	1.1	1.2	2.6	3.4	1.8
12.....		8.0	1.5	1.3	1.3	28.....	1.2	1.2	1.4	2.0	1.7
13.....		8.3	1.4	1.2	1.6	29.....	1.0	1.1	1.3	1.8	1.6
14.....		9.3	1.3	1.2	1.8	30.....	1.0	1.1	1.3	1.7	1.9
15.....		9.3	1.2	1.2	1.7	31.....	1.6	.....	1.3	.....	5.1
16.....	1.1	3.9	1.2	1.2	1.6						

The following discharge measurements were made during 1901 by Max Hall and others:

April 5—Gage height, 3.0 feet; discharge, 526 second-feet.

October 22—Gage height, 1.0 feet; discharge, 90 second-feet.

Daily gage height in feet of Talladega Creek at Nottingham, Ala., for 1901.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	3.2	2.3	2.0	3.4	2.2	2.0	1.5	1.1	1.2	1.1	1.0	1.0
2.....	2.8	2.1	2.0	5.9	2.2	2.0	1.4	1.0	1.2	2.8	1.0	1.4
3.....	3.2	3.8	2.0	4.5	2.1	2.0	1.3	1.0	1.2	2.5	1.0	1.3
4.....	2.7	8.0	2.0	3.4	2.0	1.8	1.3	1.0	1.1	1.5	1.0	1.2
5.....	2.4	3.9	1.8	3.0	2.0	1.7	1.3	1.0	1.1	1.3	1.0	1.2
6.....	2.2	3.2	1.8	2.9	1.9	1.7	1.4	1.0	1.1	1.2	1.0	1.3
7.....	2.1	2.8	1.8	2.6	1.9	3.0	1.4	1.0	1.1	1.1	1.0	1.1
8.....	2.1	2.8	1.8	2.5	1.9	1.9	1.3	1.0	1.1	1.1	1.0	1.0
9.....	2.0	3.3	1.8	2.3	1.9	1.7	1.3	1.0	1.0	1.1	1.0	1.0
10.....	1.9	2.8	2.0	2.2	1.9	1.6	1.2	1.0	1.0	1.0	1.0	1.1
11.....	5.8	2.6	1.9	2.1	1.9	1.5	1.2	1.0	1.0	1.0	1.0	1.1
12.....	8.8	2.7	1.8	2.1	1.9	1.5	1.2	1.1	1.0	1.0	1.0	1.0
13.....	4.7	2.5	1.8	2.7	2.0	1.6	1.2	1.0	1.0	1.1	1.0	1.0
14.....	3.4	2.3	1.8	3.7	1.9	1.8	1.2	1.0	1.0	1.0	1.0	2.4
15.....	2.9	2.2	1.8	2.7	1.9	1.7	1.2	1.0	1.0	1.0	1.0	3.5
16.....	2.6	2.2	1.7	2.5	1.9	1.6	1.2	2.3	1.0	1.0	1.0	1.7
17.....	2.7	2.2	1.7	2.3	1.8	1.5	1.2	2.2	3.4	1.0	1.0	1.5
18.....	2.4	2.1	1.7	2.4	1.7	1.4	2.0	1.9	2.8	1.0	1.0	1.3
19.....	2.2	2.1	1.7	11.2	1.9	1.4	1.5	1.7	1.6	1.0	1.0	1.2
20.....	2.2	2.0	1.8	6.3	2.5	1.4	1.3	1.5	1.5	1.0	1.0	1.1
21.....	2.1	2.0	2.1	4.1	3.9	1.4	1.3	1.4	1.4	1.0	1.0	1.1
22.....	2.2	2.0	2.0	3.4	2.5	1.3	1.2	1.3	1.3	1.0	1.1	1.1
23.....	2.2	2.0	1.8	3.1	2.0	1.3	1.2	1.2	1.3	1.0	1.2	1.1
24.....	2.2	2.1	2.6	2.8	1.8	1.3	1.2	1.2	1.2	1.0	1.3	1.1
25.....	2.2	2.1	2.8	2.7	1.7	1.3	1.2	1.5	1.2	1.0	1.2	1.3
26.....	2.3	2.1	8.9	2.6	1.7	1.3	1.2	1.3	1.1	1.0	1.1	1.2
27.....	2.2	2.0	4.6	2.5	1.7	1.3	1.2	1.4	1.1	1.0	1.1	1.1
28.....	2.2	.20	3.3	2.4	1.7	1.3	1.2	1.5	1.1	1.0	1.0	1.2
29.....	2.2	.....	2.8	2.3	1.7	1.3	1.2	1.4	1.1	1.0	1.0	8.4
30.....	2.6	.....	2.9	2.2	1.7	1.4	1.2	1.3	1.1	1.0	1.0	7.5
31.....	2.5	.....	5.5	.....	2.2	...	1.2	1.2	.....	1.0	.....	3.5

Rating table for Talladega Creek at Nottingham, Ala., for 1900 and 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.
1.0	90	2.1	328	3.2	570	4.3	812
1.1	109	2.2	350	3.3	592	4.4	834
1.2	130	2.3	372	3.4	614	4.5	856
1.3	152	2.4	394	3.5	636	4.6	878
1.4	174	2.5	416	3.6	658	4.7	900
1.5	196	2.6	438	3.7	680	4.8	922
1.6	218	2.7	460	3.8	702	4.9	944
1.7	240	2.8	482	3.9	724	5.0	966
1.8	262	2.9	504	4.0	746		
1.9	284	3.0	526	4.1	768		
2.0	306	3.1	548	4.2	790		

NOTE.—This table applied to the foregoing "Daily gage heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.

Estimated monthly discharge of Talladega Creek at Nottingham, Ala.

Month.	Discharge in second-feet.			Run-off.	
	Maxi-mum.	Mini-mum.	Mean.	Second-feet per square mile.	Depth in inches.
1900.					
August 16-31			113	0.72	0.43
September	2,286	74	575	3.69	4.12
October	636	90	190	1.22	1.41
November	724	130	249	1.60	1.79
December	746	152	291	1.87	2.16
1901.					
January	1,802	284	485	3.11	3.59
February	1,626	306	449	2.88	3.00
March	1,824	240	405	2.60	3.00
April	2,330	328	591	3.79	4.23
May	724	240	306	1.96	2.26
June	526	152	218	1.40	1.56
July	196	130	149	.96	1.11
August	372	90	148	.95	1.10
September	614	90	148	.95	1.06
October	482	90	123	.79	.91
November	152	90	97	.62	.69
December	1,714	90	264	1.69	1.95
The year	2,330	90	282	1.81	24.46

Minimum monthly discharge of Talladega Creek at Nottingham, Ala., with corresponding net horse-power per foot of fall on a water-wheel realizing 80 per cent. of the theoretical power.

	1900			1901		
	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.
January				284	26	1
February				306	28	6
March				240	22	4
April				328	30	2
May				240	22	7
June				152	14	8
July				130	12	18
August	66	6	1	90	8	13
September	74	6.7	1	90	8	8
October	90	8	5	90	8	21
November	130	12	7	90	8	24
December	152	14	3	90	8	5

NOTE.—To find the minimum net horse power available at a shoal on this stream, near this station, for any month, multiply the total fall of the shoal by the "Net H. P. per foot of fall" in this table for that month.

4. ALABAMA RIVER AT SELMA, ALABAMA.

This station was originally established by the United States Engineer Corps; readings are now taken by the United States Weather Bureau. The gage, which is attached to the iron highway bridge, the floor of which is about 60 feet above low water, is in two sections. The lower section, which reads from -0.3 feet to $+2.30$ feet, is secured to the pile on the lower side of the cofferdam on the draw pier; the upper section, which reads from 2.30 feet to 48 feet, is spiked to the highway bridge. The bench mark, which is an iron bolt driven into the face of a rock bluff 182.3 feet from the first bridge pier, on the road ascending to the city, is 26 feet above the zero of the gage and 87.30 feet above mean sea level. The top of the coping stone of the pivot pier at the highway bridge to which gage is attached is 56 feet above the zero of the gage, and 117.30 feet above mean sea level. Graduations extend from -3.0 feet to $+48$ feet. No measurements of discharge were made here during 1899.

Daily gage height, in feet, of Alabama River at Selma, Ala., for 1899.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	6.2	10.8	35.8	23.8	13.9	4.5	2.5	11.1	3.7	-1.2	-0.2	4.8
2.....	6.2	17.0	36.8	24.3	11.5	4.0	2.5	9.9	4.6	-1.3	-.3	3.7
3.....	6.5	20.2	38.8	24.9	9.9	4.0	2.6	9.0	4.6	-1.3	-.5	3.0
4.....	6.2	24.0	37.7	24.1	9.8	4.0	2.6	6.7	4.8	-1.3	-.6	3.0
5.....	6.2	26.8	35.3	22.3	8.5	3.8	2.1	6.5	4.4	-1.1	-.7	2.8
6.....	5.8	27.2	32.6	20.9	8.1	3.9	1.6	5.8	4.4	-1.0	-.7	2.8
7.....	6.6	27.2	30.5	20.0	7.5	3.8	1.6	5.3	4.1	-1.6	-.8	1.7
8.....	8.3	29.8	27.5	19.8	7.4	3.7	1.5	4.7	3.9	-.5	-.8	1.7
9.....	9.7	32.2	23.4	23.3	7.3	3.3	1.4	4.5	3.6	-.4	-.8	1.3
10.....	11.6	33.9	19.7	25.6	7.3	3.1	1.3	3.7	.6	-.4	-.9	1.3
11.....	13.9	34.4	16.9	26.9	7.5	2.8	1.3	3.5	.4	-.5	-.9	1.4
12.....	14.8	33.9	15.0	26.6	7.2	2.3	1.2	3.0	.3	-.6	-1.0	4.0
13.....	21.2	32.0	13.9	25.1	6.8	2.6	1.5	2.9	.3	-.6	-1.1	10.4
14.....	21.9	30.0	16.2	22.6	6.5	2.4	1.2	2.7	.2	-.2	-1.2	16.6
15.....	19.8	28.0	16.8	19.5	6.3	2.4	1.1	2.6	.2	-.2	-1.2	17.8
16.....	18.0	26.5	19.4	16.3	6.2	2.3	1.0	2.6	.1	-.2	-1.3	16.3
17.....	17.5	26.8	21.4	14.0	6.1	2.8	1.0	2.6	.6	-.3	-1.3	13.4
18.....	17.2	24.0	27.7	13.0	5.6	3.4	.7	3.6	1.3	-.5	-1.3	9.9
19.....	17.0	22.3	31.6	12.0	5.4	3.9	.6	4.1	1.0	-.7	-1.2	8.4
20.....	15.8	19.9	33.5	11.2	5.0	3.9	.6	4.3	.9	-.6	-1.0	3.8
21.....	14.2	19.9	34.7	10.5	4.8	3.1	1.0	3.6	.6	-.7	-1.0	3.8
22.....	12.6	19.5	34.8	10.4	4.5	2.8	1.6	3.5	.6	-.8	-.6	3.4
23.....	10.2	18.8	34.2	10.2	4.4	1.6	5.5	3.4	-.7	-.2	-.6	3.4
24.....	10.3	17.8	33.4	10.1	4.8	1.4	10.7	3.1	-.8	.0	-.3	3.8
25.....	9.4	17.3	31.1	12.4	5.0	1.4	14.8	3.6	-1.0	.0	.1	7.6
26.....	9.0	16.4	32.6	13.5	6.0	1.6	17.0	4.2	-1.0	-.5	.2	12.2
27.....	8.9	20.3	31.8	16.3	6.1	1.7	17.0	3.9	-1.0	-.5	.9	13.5
28.....	8.6	31.2	30.5	17.9	5.2	2.0	14.9	3.6	-1.0	-.6	3.2	13.7
29.....	8.6	.....	29.3	17.7	4.3	2.2	12.1	4.3	-1.1	-.6	4.6	12.3
30.....	9.0	.....	27.8	16.1	4.3	2.4	12.8	4.6	-1.1	-.6	4.8	11.4
31.....	9.6	.....	26.3	.....	4.2	...	11.9	3.8	.....	-.4	.....	8.3

During 1900 the following measurements were made:

April 14—Gage height, 23.60 feet; discharge 66,607 second-feet.

May 26—Gage height, 6.10 feet; discharge, 17,049 second-feet.

August 24—Gage height, 3.10 feet; discharge, 9,879 second-feet.

Daily gage height, in feet, of Alabama River at Selma, Ala., for 1900.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	7.2	4.8	17.2	19.8	15.4	4.8	34.8	14.0	3.9	0.8	2.0	16.0
2.....	6.6	3.6	19.7	16.8	13.9	4.6	33.0	13.0	3.9	.7	2.0	14.0
3.....	4.3	3.5	22.2	14.0	13.0	4.4	29.8	11.0	3.8	.6	4.0	11.0
4.....	3.3	3.9	22.0	12.0	12.0	4.2	26.5	9.0	4.5	.6	9.0	9.0
5.....	3.0	4.7	20.6	10.9	11.8	5.6	23.5	7.0	5.4	.5	14.0	8.0
6.....	3.0	6.2	17.8	8.0	10.2	5.1	20.2	6.0	5.0	1.0	13.5	7.5
7.....	3.0	8.2	15.0	7.8	9.6	4.6	17.0	5.5	4.5	1.8	9.4	7.0
8.....	3.0	8.4	13.9	8.9	8.8	4.2	14.0	5.0	4.1	2.5	6.3	7.0
9.....	2.7	8.5	14.9	9.6	8.0	6.8	11.5	4.8	3.3	4.0	4.0	9.0
10.....	2.7	10.7	18.8	9.5	7.8	11.6	10.0	4.5	1.8	4.2	2.0	9.4
11.....	3.3	16.0	20.9	9.8	7.5	13.5	9.8	3.2	1.0	2.0	2.0	6.0
12.....	7.7	22.2	22.2	12.0	7.3	14.0	10.2	3.0	.7	2.0	1.9	5.0
13.....	12.4	29.9	22.0	17.7	7.0	13.9	10.0	2.8	.6	2.5	1.6	2.0
14.....	13.5	38.6	19.9	23.4	6.6	12.8	9.9	2.5	1.0	4.3	1.6	3.2
15.....	14.7	44.0	19.0	25.5	6.4	11.0	9.9	2.5	1.6	6.7	1.0	9.0
16.....	14.0	47.0	16.9	25.0	6.0	9.0	10.0	2.4	11.0	6.0	1.0	11.0
17.....	13.2	48.0	15.3	22.5	5.7	8.9	9.9	2.8	18.0	5.2	1.0	11.0
18.....	12.0	47.9	13.9	23.5	5.5	8.8	9.0	2.7	19.0	2.5	1.0	10.0
19.....	11.1	47.0	14.3	29.0	5.2	8.6	7.0	2.7	19.4	1.0	1.0	6.0
20.....	11.1	44.1	14.6	34.8	5.1	10.0	7.0	2.5	16.0	1.0	1.0	5.1
21.....	13.4	41.6	18.8	39.0	5.0	10.9	6.5	2.3	12.5	.9	1.0	9.0
22.....	16.9	36.9	23.0	39.8	5.0	12.0	6.5	2.6	10.0	1.0	1.6	14.5
23.....	18.5	33.2	25.5	41.0	4.8	12.9	6.3	3.6	6.0	1.5	6.0	17.0
24.....	18.3	22.6	29.0	40.0	5.5	14.0	6.0	3.8	3.0	6.0	9.0	17.2
25.....	17.0	22.6	30.2	38.5	6.1	17.6	5.8	4.0	1.9	11.5	9.8	17.6
26.....	14.7	21.1	32.7	35.8	6.2	24.5	5.0	3.5	1.6	12.0	9.9	18.0
27.....	13.0	19.0	33.3	32.7	6.6	29.0	4.5	3.5	1.0	11.5	13.0	17.0
28.....	11.2	16.9	32.5	28.5	6.8	32.0	4.4	3.4	1.0	12.3	16.0	14.5
29.....	8.4	.....	30.5	23.0	6.0	33.5	7.5	3.5	.9	13.0	16.8	12.9
30.....	6.5	.....	27.7	18.0	5.5	35.0	8.0	4.0	.8	11.0	17.0	11.2
31.....	4.8	.....	24.4	.....	5.0	.....	11.8	4.2	.....	5.0	.....	11.0

*List of Discharge Measurements made on Alabama River at Selma,
Alabama, in 1901.*

Date, 1901.	Hydrographer.	Gage height, ft	Dischg. sec.-ft.
March 14.	Max Hall	14.20	35,518
April 25..	J. R. Hall	34.00	90,332
August 9..	K. T. Thomas	4.35	12,519
October 30	Max Hall	1.10	7,710

*Daily gage height, in feet, of Alabama River at Selma, Ala., for
1901.*

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	16.0	13.0	11.3	35.6	12.0	19.0	1.0	2.8	17.0	4.3	1.4	1.8
2.....	21.0	13.0	9.8	36.5	10.4	17.0	2.0	2.6	13.8	4.3	1.4	1.8
3.....	24.0	13.6	9.5	37.4	10.0	16.5	2.4	2.6	10.6	5.0	1.4	1.9
4.....	24.6	17.0	9.3	38.5	9.6	18.5	6.6	2.8	8.8	7.4	1.5	2.2
5.....	24.0	24.9	9.6	38.4	8.2	19.0	6.0	3.0	8.0	7.9	1.5	2.3
6.....	23.0	30.1	9.6	37.2	7.0	19.8	5.6	2.8	7.4	6.4	1.4	2.3
7.....	18.0	33.0	9.4	35.5	7.0	18.5	5.6	6.6	6.0	5.8	1.6	2.4
8.....	15.0	35.1	8.0	33.0	6.8	17.4	5.5	4.6	5.2	5.0	1.6	2.1
9.....	13.3	35.6	7.7	28.0	6.4	16.1	5.5	4.2	4.4	4.3	1.5	2.0
10.....	10.0	35.7	7.9	22.6	6.0	14.8	5.5	3.4	4.4	3.4	1.5	2.2
11.....	8.1	35.0	9.0	17.4	5.0	12.0	5.2	4.0	3.6	2.9	1.5	2.4
12.....	16.5	31.4	10.2	14.0	5.0	11.0	5.2	5.3	3.4	2.8	1.5	2.4
13.....	28.0	31.2	12.0	12.0	4.8	9.5	5.1	6.2	3.2	2.6	1.4	2.4
14.....	34.0	27.0	14.1	11.8	4.5	8.0	4.4	4.4	3.7	2.5	1.4	2.6
15.....	38.0	26.0	15.4	12.0	4.0	7.6	3.7	3.8	4.3	2.2	1.4	5.0
16.....	39.5	20.6	15.0	15.0	3.8	7.0	3.7	6.0	4.0	2.5	1.3	10.0
17.....	40.0	16.9	14.8	16.5	3.4	6.1	3.5	7.4	5.0	2.5	1.3	18.0
18.....	39.0	14.6	12.0	17.3	3.2	6.0	4.3	11.0	5.0	2.4	1.3	21.6
19.....	37.5	13.1	11.1	22.0	3.0	5.0	6.3	12.0	5.5	2.0	1.4	22.0
20.....	35.0	12.6	10.5	28.6	3.0	4.1	7.3	16.0	9.5	2.3	1.6	21.5
21.....	32.4	12.0	11.0	35.0	3.5	3.4	6.0	17.6	11.4	2.5	1.8	18.7
22.....	29.0	11.8	11.9	38.0	4.7	3.0	5.5	18.8	11.5	2.5	1.8	15.0
23.....	24.0	11.7	12.2	39.0	9.4	3.0	5.4	20.0	11.2	2.2	1.8	14.2
24.....	22.0	11.6	13.0	38.0	17.0	2.6	5.4	20.9	10.0	2.0	1.8	12.0
25.....	14.0	11.2	14.7	35.8	19.0	2.2	4.4	22.8	7.5	2.0	1.9	11.0
26.....	12.8	11.5	17.0	31.9	20.0	2.0	4.0	24.6	6.0	2.0	1.9	7.1
27.....	12.8	11.4	22.5	28.0	20.9	1.5	4.0	24.8	4.4	1.8	2.0	6.2
28.....	12.7	11.3	27.6	24.2	22.0	1.3	3.6	22.9	4.0	1.6	2.0	6.0
29.....	12.7	.....	31.0	19.5	21.8	1.2	2.9	21.0	4.0	1.5	2.0	11.0
30.....	13.0	.....	33.0	15.0	20.7	1.2	2.9	20.6	4.2	1.3	1.8	23.0
31.....	13.0	.....	34.5	.....	19.5	..	2.8	19.5	.....	1.3	.....	35.0

Rating table for Alabama River at Selma, Ala., for 1900 and 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.
0.0	6,700	7.6	21,116	15.2	41,332	22.8	61,548
0.1	6,770	7.7	21,382	15.3	41,598	22.9	61,814
0.2	6,845	7.8	21,648	15.4	41,864	23.0	62,080
0.3	6,925	7.9	21,914	15.5	42,130	23.1	62,346
0.4	7,010	8.0	22,180	15.6	42,396	23.2	62,612
0.5	7,100	8.1	22,446	15.7	42,662	23.3	62,878
0.6	7,184	8.2	22,712	15.8	42,928	23.4	63,144
0.7	7,282	8.3	22,978	15.9	43,194	23.5	63,410
0.8	7,384	8.4	23,244	16.0	43,460	23.6	63,676
0.9	7,488	8.5	23,510	16.1	43,726	23.7	63,942
1.0	7,596	8.6	23,776	16.2	43,992	23.8	64,208
1.1	7,706	8.7	24,042	16.3	44,258	23.9	64,474
1.2	7,818	8.8	24,308	16.4	44,524	24.0	64,740
1.3	7,931	8.9	24,574	16.5	44,790	24.1	65,006
1.4	8,045	9.0	24,840	16.6	44,056	24.2	65,272
1.5	8,160	9.0	25,106	16.7	45,322	24.3	65,538
1.6	8,270	9.2	25,372	16.8	45,588	24.4	65,804
1.7	8,393	9.3	25,638	16.9	45,854	24.5	66,070
1.8	8,511	9.4	25,904	17.0	46,120	24.6	66,336
1.9	8,630	9.5	26,170	17.1	46,386	24.7	66,602
2.0	8,750	9.6	26,436	17.2	46,652	24.8	66,868
2.1	8,872	9.7	26,702	17.3	46,918	24.9	67,134
2.2	8,996	9.8	26,968	17.4	47,184	25.0	67,400
2.3	9,124	9.9	27,234	17.5	47,450	25.1	67,666
2.4	9,256	10.0	27,500	17.6	47,716	25.2	67,932
2.5	9,392	10.1	27,766	17.7	47,982	25.3	68,198
2.6	9,532	10.2	28,032	17.8	48,248	25.4	68,464
2.7	9,676	10.3	28,290	17.9	48,514	25.5	68,730
2.8	9,822	10.4	28,564	18.0	48,780	25.6	68,996
2.9	9,970	10.5	28,830	18.1	49,046	25.7	69,262
3.0	10,120	10.6	29,096	18.2	49,312	25.8	69,528
3.1	10,272	10.7	29,362	18.3	49,578	25.9	69,794
3.2	10,428	10.8	29,628	18.4	49,844	26.0	70,060
3.3	10,588	10.9	29,894	18.5	50,110	26.1	70,326
3.4	10,752	11.0	30,160	18.6	50,376	26.2	70,592
3.5	10,920	11.1	30,426	18.7	50,642	26.3	70,858
3.6	11,092	11.2	30,692	18.8	50,908	26.4	71,124
3.7	11,268	11.3	30,958	18.9	51,174	26.5	71,390
3.8	11,448	11.4	31,224	19.0	51,440	26.6	71,656
3.9	11,632	11.5	31,490	19.1	51,706	26.7	71,922
4.0	11,820	11.6	31,756	19.2	51,972	26.8	72,188
4.1	12,015	11.7	32,022	19.3	52,238	26.9	72,454
4.2	12,220	11.8	32,228	19.4	52,504	27.0	72,720
4.3	12,435	11.9	32,556	19.5	52,770	27.1	72,986
4.4	12,660	12.0	32,820	19.6	53,036	27.2	73,252
4.5	12,900	12.1	33,086	19.7	53,302	27.3	73,518



WATER-POWERS OF ALABAMA.

89

Rating table for Alabama River at Selma, Ala., for 1900 and 1901.
Continued.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
<i>Feet.</i>	<i>Second ft.</i>	<i>Feet.</i>	<i>Second ft.</i>	<i>Feet.</i>	<i>Second ft.</i>	<i>Feet.</i>	<i>Second ft.</i>
4.6	13,150	12.2	33,352	19.8	53,568	27.4	73,784
4.7	13,405	12.3	33,618	19.9	53,884	27.5	74,050
4.8	13,668	12.4	33,884	20.0	54,100	27.6	74,316
4.9	13,934	12.5	34,150	20.1	54,366	27.7	74,582
5.0	14,200	12.6	34,416	20.2	54,632	27.8	74,848
5.1	14,466	12.7	34,682	20.3	54,898	27.9	75,114
5.2	14,732	12.8	34,948	20.4	55,164	28.0	75,380
5.3	14,998	12.9	35,214	20.5	55,430	28.1	75,646
5.4	15,264	13.0	35,480	20.6	55,696	28.2	75,912
5.5	15,530	13.1	35,746	20.7	55,962	28.3	76,178
5.6	15,796	13.2	36,012	20.8	56,228	28.4	76,444
5.7	16,062	13.3	36,278	20.9	56,494	28.5	76,710
5.8	16,328	13.4	36,544	21.0	56,760	28.6	76,976
5.9	16,594	13.5	36,810	21.1	57,026	28.7	77,242
6.0	16,860	13.6	37,076	21.2	57,292	28.8	77,508
6.1	17,126	13.7	37,342	21.3	57,558	28.9	77,774
6.2	17,392	13.8	37,608	21.4	57,824	29.0	78,040
6.3	17,658	13.9	37,874	21.5	58,090	29.1	78,306
6.4	17,924	14.0	38,140	21.6	58,356	29.2	78,572
6.5	18,190	14.1	38,406	21.7	58,622	29.3	78,838
6.6	18,456	14.2	38,672	21.8	58,888	29.4	79,104
6.7	18,722	14.3	38,938	21.9	59,154	29.5	79,370
6.8	18,988	14.4	39,204	22.0	59,420	29.6	79,636
6.9	19,254	14.5	39,470	22.1	59,686	29.7	79,902
7.0	19,520	14.6	39,736	22.2	59,952	29.8	80,168
7.1	19,786	14.7	40,002	22.3	60,218	29.9	80,434
7.2	20,052	14.8	40,268	22.4	60,484	30.0	80,700
7.3	20,318	14.9	40,534	22.5	60,750		
7.4	20,584	15.0	40,800	22.6	61,016		
7.5	20,850	15.1	41,066	22.7	61,282		

NOTE—This table applied to the foregoing “daily gage heights” gives cubic feet per second flowing in the river on each date for which the gage height is given.

Estimated monthly discharge of Alabama River at Selma, Ala.
 [Drainage area, 13,500 square miles.]

Month.	Discharge in second-feet			Run-off.	
	Maxi- mum.	Mini- mum.	Mean.	Depth in inches.	Second- feet per square mile.
1900.					
January	50,110	9,676	26,495	1.96	2.26
February	128,540	10,920	63,763	4.72	4.91
March	89,478	37,874	58,272	4.32	4.98
April	109,960	21,648	60,909	4.51	5.03
May	41,864	13,668	21,090	1.56	1.80
June	94,000	12,220	35,288	2.61	2.91
July	93,468	12,660	33,964	2.52	2.90
August	38,140	9,124	14,156	1.05	1.21
September	52,504	7,189	17,366	1.29	1.44
October	35,480	7,097	14,492	1.07	1.23
November	46,120	7,596	18,506	1.37	1.53
December	48,780	8,750	28,989	2.15	2.48
The year	128,540	7,097	33,772	2.34	32.68
1901.					
January	107,300	22,446	61,213	4.53	5.22
February	95,862	30,692	55,037	4.08	4.25
March	92,670	21,382	39,017	2.89	3.33
April	104,640	32,288	73,048	5.41	6.04
May	59,420	10,120	26,966	2.00	2.31
June	53,568	7,818	26,030	1.93	2.15
July	21,318	7,596	13,536	1.00	1.15
August	66,868	9,532	30,853	2.29	2.64
September	46,120	10,428	19,394	1.44	1.61
October	21,914	7,931	11,022	.82	.95
November	8,750	7,931	8,266	.61	.68
December	94,000	8,511	26,638	1.97	2.27
The year	107,300	7,596	32,585	2.47	32.60

Minimum monthly discharge of the Alabama River at Selma, Ala., with corresponding net horsepower per foot of fall on a water wheel realizing 80 per cent. of the theoretical power.

[Drainage area, 15,400 square miles.]

	1899.			1900.			1901		
	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.
January	16,328	1,484	1	9,676	880	2	22,446	2,041	1
February ...	29,628	2,693	1	10,920	993	1	30,692	2,790	1
March	37,874	3,443	1	37,874	3,443	2	21,382	1,944	1
April	27,760	2,524	1	21,648	1,968	1	32,288	2,935	1
May	12,220	1,111	1	13,668	1,243	1	10,120	920	2
June	8,045	731	2	12,220	1,111	2	7,818	711	2
July	7,184	653	2	12,660	1,151	1	7,596	691	1
August	9,532	867	3	9,124	829	1	9,532	867	2
September ..	5,800	527	2	7,189	653	1	10,428	948	1
October	5,400	491	1	7,100	645	1	7,931	721	2
November ...	5,700	518	3	7,596	691	7	7,931	721	3
December ...	7,931	721	2	8,750	795	1	8,511	774	2

NOTE.—To find the minimum net horse power available at a shoal on this stream, near this station, for any month, multiply the total fall of the shoal by the "Net H. P. per foot of fall" in this table for that month.

5. MISCELLANEOUS DISCHARGE MEASUREMENTS

Made by B. M. Hall, and Assistants, on Tributaries of Coosa River.

1898.

May 26—Choccolocco Creek, Eureka; discharge, 171 second-feet; low water.

1900.

March 15—Talladega Creek, Kymulga postoffice; discharge, 107 second-feet; medium.

March 16—Tallassahatchee Creek, in Talladega county, Childersburg; discharge, 102 second-feet.

March 17—Hatchet Creek, Goodwater; discharge, 84 second-feet.

April 5—Choccolocco Creek, L. & N. R. R. bridge, near Jenifer; discharge, 1,170 second-feet; high water.

Oct. 16—Big Wills Creek, Wesson's Mill, 2 miles north of Attalla; discharge, 107 second-feet; low water.

6. TRIBUTARIES OF THE COOSA RIVER FROM WETUMPKA UP.

From which side.	Name of Stream.	Point on stream.	Drainage area, sq. miles.	Estimated discharge cu. ft. per sec. low water 1900-1901.	Net H.P. per ft. of fall on 80 per cent. turbine.
Left..	Sofkahatchee Creek	Mouth of Creek.....	40	12	1.1
Left..	Wewoka Creek	Mouth of Creek.....	85	28	2.5
Right	Chestnut Creek	Mouth of Creek.....	90	30	2.7
Left..	Hatchet Creek	Mouth of Creek.....	500	165	15.0
Left..	Hatchet Creek	Goodwater, Ala.....	105	40	3.6
Left..	Pinthlocco Creek	Mouth of Creek.....	60	24	2.2
Right	Weogufka Creek	Mouth of Creek.....	120	48	4.3
Right	Waxahatchee Creek	Mouth of Creek.....	196	75	6.8
Right	Yellow Leaf Creek.....	Mouth of Creek.....	192	75	6.8
Left..	Tallasseehatchee Creek ..	Mouth of Creek.....	172	70	6.3
Left..	Talladega Creek	Mouth of Creek.....	188	75	6.8
Left..	Talladega Creek	Nottingham, Ala.....	156	66	6.0
Right	Kelley's Creek	Mouth of Creek.....	218	88	8.0
Left..	Choccolocco Creek	Mouth of Creek.....	510	153	13.9
Left..	Choccolocco Creek	Jenifer, Ala.....	273	95	8.6
Left..	Blue Eye Creek	Mouth of Creek.....	26	7	0.6
Right	Broken Arrow Creek.....	Mouth of Creek.....	49	13	1.6
Right	Trout Creek	Mouth of Creek.....	23	10	0.9
Left..	Cane Creek	Mouth of Creek.....	94	35	3.2
Left..	Ohatchee Creek	Mouth of Creek.....	217	85	7.7
Left..	Ohatchee Creek	Above Tallasseehatchee Creek.....	86	35	3.2
Left..	Tallasseehatchee Creek ..	Mouth of Creek.....	125	50	4.5
Right	Shoal Creek	Mouth of Creek.....	31	12	1.1
Right	Beaver Creek	Mouth of Creek.....	33	12	1.1
Right	Big Canoe Creek.....	Mouth of Creek.....	248	90	8.2
Right	Big Canoe Creek	Above Little Canoe Creek	165	65	5.9
Right	Little Canoe Creek.....	Mouth of Creek.....	34	14	1.3
Right	Big Wills Creek	Mouth of Creek.....	354	160	14.4
Right	Big Wills Creek	Above Little Wills Creek	249	115	10.4
Right	Big Wills Creek	Above Wesson Mill.....	200	107	9.7
Left..	Black Creek	Mouth of Creek.....	59	25	2.3
Right	Little Wills Creek	Mouth of Creek.....	30	14	1.3
Left..	Ball Play Creek	Mouth of Creek.....	33	15	1.4
Left..	Terrapin Creek	Mouth of Creek.....	282	130	11.8
Right	Chattooga River	Above Little River.....	334	170	15.4
Right	Chattooga River	Ala.-Ga. State Line.....	246	121	11.0
Right	Little River	Mouth of River.....	280	130	11.8
Right	Coosa River	Ala.-Ga. State Line.....	4340	2000	181.8

NOTE—To find the net horsepower available at a shoal on one of these streams, near a point given, for low water 1900-1901, multiply the total fall of the shoal by the "net horsepower per foot fall" in this table for that point.

7. WATER POWERS ON TRIBUTARIES OF COOSA RIVER IN ALABAMA.

On the above named tributaries there are many important water powers, very few of which have been surveyed. The above list giving the drainage area, the discharge for low season, 1900-1901, and the corresponding net horse power per foot fall for each of the streams will be very useful in estimat-

ing the horse power available on any shoal, the fall of which may hereafter be surveyed, by the owners, or by parties contemplating development.

Talladega Creek, in the vicinity of Taylor's Mill, has a fall of 73 feet in one mile, where it emerges from the Crystalline rocks. Taking the flow at Nottingham, we say that during the low water of 1900 and 1901 this 73 feet of fall would have produced 438 net horse power without storage. This 73 feet is probably the most precipitous shoal on the large creek, but above it for four or five miles the creek has a number of rapids and shoals that will admit of good development.

The head waters of this stream in the neighborhood of the pyrites mines in Clay county have high falls on them.

Choccolocco Creek is a very large and constant stream, and has many rapids where good powers could be developed by dams. During a season such as low water of 1900 or 1901 a 10-foot dam near Jenifer would develop 86 net H. P. A 10-foot dam at any point near the mouth of the creek would develop 140 net H. P. during the given season.

Big Wills Creek, at the old Wesson mill, two miles north of Attalla, has a good site for a 25-foot dam. The flow at this point on October 16, 1901, was 107 second-feet, which with a fall of 25 feet, will give 242 net H. P. The fall on other tributaries named has not been ascertained.

8. COOSA RIVER SURVEY.

The Coosa River has its beginning at the junction of the Etowah and Oastanaula Rivers, at Rome, Ga., a short distance west of the Alabama line.

From Rome down to Greensport, Ala., a distance of about 180 miles by river, navigation has been carried on for many years. The total fall in this section is only about 55 feet, and is so well distributed that it has not been necessary to construct locks at any point, though improvements have been made by the U. S. Government in the way of deepening channels, blasting out reefs, and building wing dams, etc.

This part of the river will, therefore, not be considered as having any water power value.

Below Greensport, Ala., the river has a large amount of fall, and although it is proposed to make the whole distance navigable by the construction of locks, there are many fine water power propositions which can be developed in connection with

the river improvements without interfering with navigation.

A complete survey has been made of this portion of the river by the U. S. engineers, and a system of locks planned.

The profile herein presented is reproduced from that survey, and shows in addition to the river profile the location of the proposed locks, and the lift of each.

It will be seen that the total distance between Greensport and Wetumpka, Ala., is 142 miles, and the number of locks proposed, 31, varying in lift from 5.83 feet to 15.0 feet. Of these only three have been completed; Nos. 1, 2, and 3. No. 4 is in process of construction.

The following table shows the lift or fall at each lock, the discharge of river in cubic feet per second, for the minimum low stage of water in 1897 and in 1900, and the equivalent net horse power for the fall shown.

The minimum low water is based on the exceptionally low stages occurring in 1896 and 1897, which represents the lowest stage of which there is any record; while the minimum for the year 1900 represents lowest water for average years.

In estimating the amount of horse power that will be available for use, it will be necessary to deduct the amount of water which will be necessary for lockage. This will depend upon the amount of traffic on the river, but will probably in no case amount to more than ten per cent. of the river discharge.

At most of these locks, and proposed locks, reservations have been made by the original owners of the river front of the privilege of utilizing for power the water not needed for lockage. By constructing a plant at the opposite end of the Government dam from the lock, the surplus water can be used for power without interfering with navigation. Such powers will be very valuable for running cotton mills, as the cotton furrows will run up to the front door of the factory, and water transportation will take the goods from the back door. Mobile, at the mouth of the river, is only a short distance from the proposed Isthmian canal.

9. TABLE OF DISCHARGE, AND NET H. P. AT THE 31 LOCKS AND PROPOSED LOCKS ON THE COOSA RIVER AT LOWEST WATER OF 1897 AND 1900.

[80 % of Theoretical H. P.]

Miles from Wetumpka, Ala.	Lock No.	Tide Water Elevation, top of lock.	Lift or Fall in feet at lock.	Minimum Low Water, 1897.		Minimum Low Water, 1900.	
				Cubic ft. per second.	Net H. P.	Cubic ft. per second.	Net H. P.
141.5	1	521.30	5.33	1,320	640	2,700	1,308
138.5	2	515.97	5.57	1,320	668	2,700	1,367
137.0	3	510.40	12.00	1,320	1,440	2,700	2,945
116.2	4	492.30	10.00	1,350	1,227	2,760	2,510
105.8	5	482.30	12.00	1,350	1,472	2,760	3,012
92.0	6	455.32	10.00	1,440	1,310	2,940	2,673
88.3	7	445.32	10.00	1,450	1,317	2,960	2,690
81.3	8	435.32	12.00	1,490	1,625	3,040	3,317
56.2	9	420.00	8.00	1,580	1,149	3,220	2,342
53.5	10	412.00	12.00	1,585	1,728	3,230	3,523
46.7	11	399.64	10.00	1,585	1,440	3,230	2,936
44.9	12	389.64	10.00	1,600	1,454	3,260	2,964
43.0	13	379.64	12.00	1,600	1,745	3,260	3,557
41.9	14	367.64	12.00	1,600	1,745	3,260	3,557
40.2	15	355.64	10.00	1,605	1,460	3,270	2,973
37.5	16	345.64	14.00	1,605	2,044	3,270	4,162
36.1	17	331.64	15.00	1,605	2,190	3,270	4,460
34.8	18	316.64	13.00	1,610	1,903	3,280	3,877
33.8	19	303.64	12.00	1,610	1,757	3,280	3,578
31.5	20	291.64	10.00	1,610	1,464	3,280	2,982
25.5	21	281.33	10.00	1,700	1,545	3,460	3,145
21.4	22	270.80	12.00	1,700	1,854	3,460	3,774
18.5	23	258.80	14.00	1,710	2,175	3,480	4,430
16.3	24	244.80	10.00	1,710	1,554	3,480	3,164
12.9	25	234.80	10.00	1,710	1,554	3,480	3,164
11.7	26	224.80	12.00	1,720	1,877	3,500	3,818
8.8	27	212.80	14.00	1,720	2,190	3,500	4,455
7.4	28	198.80	12.00	17,20	1,877	3,500	3,818
4.6	29	186.37	8.00	1,740	1,266	3,540	2,574
2.0	30	178.37	10.00	1,740	1,582	3,540	3,218
0.0	31	168.37	14.00	1,740	2,215	3,540	4,505
Total net H. P.				49,467			100,798

Locks and proposed locks on Coosa River are located as follows:

Lock No. 1 is one mile south of Greensport, Ala., and five miles north of Singleton, which is a station on the East & West Railroad of Alabama. Lock No. 1 is three miles above lock No. 2.

Lock No. 2 is one and a half miles above lock No. 3, and is located at the head of Woods Island,, and two miles northeast of Singleton, Ala., which is a station on the East & West Railroad. This lock is situated at the head of Ten Island Shoal Canal.

Lock No. 3 is one and a half miles below lock No. 2, near the foot of Woods Island, and on Ten Island Shoal Canal. It is one mile east of Singleton, Ala., and 20.8 miles above lock No. 4.

Lock No. 4 is three and a half miles above the U. S. G. S. Hydrographic Station, Riverside, Ala., and three miles northwest of Lincoln, Ala. Lincoln and Riverside are on the Georgia Pacific division of the Southern Railway. Lock No. 4 has a lift of 12 feet, and is three-quarters of a mile below Denson's Island, and ten miles above proposed lock No. 5.

Proposed lock No. 5 is to be at the head of Ogletree Island, one mile above the mouth of Choccolocco Creek, and five miles northeast of Hamilton, on the Talladega & Coosa Valley Railroad. Has a lift of ten feet.

Proposed lock No. 6 is to be located one-fourth of a mile above the mouth of Upper Clear Creek, one and a half miles above Grissom's Ferry, and nine miles north-east of Vincent, which is a station on the Columbus & Western division of the Central of Georgia Railroad.

Proposed lock No. 7 is to be located two miles above Kelly Creek, and five and a half miles north-east of Vincent, Ala.

Proposed lock No. 8 is to be located at Myer's Ferry, at the mouth of Lower Clear Creek, six miles east of Harpersville, and three miles north-east of Creswell, which is a station on the Columbus & Western division of the Central of Georgia Railroad.

Proposed lock No. 9 is to be located at the mouth of Kelly Branch, at Fort Williams Shoals. It is to be thirteen and a half miles east of Columbiana, Ala., and eight miles east of Shelby, Ala.

Lock No. 10 is to be located a half mile above Peckerwood Creek, at the foot of Peckerwood Shoals, and is eight miles east of Shelby, Ala., and two miles west of Talladega Springs, Ala.

Lock No. 11 is to be located at the foot of Weduska Shoals, immediately above the narrows, two miles above Waxahatchee Creek, and six miles south-east of Shelby, Ala., which is a station on the Shelby Iron Works Railroad, connecting with the E. T., V. & G. R. R. at Columbiana, Ala.

Lock No. 12 is to be located 1.8 miles below lock No. 11, immediately below the mouth of Waxahatchee Creek, and eight miles south-east of Shelby, Ala.

Lock No. 13 is to be located 1.9 miles below lock No. 12, at a place known as Devil's Race, three miles above the mouth of Lower Yellow Leaf Creek, and sixteen miles north-east of Clanton, Ala., on the L. & N. R. R.

Lock No. 14 is to be located one mile below lock No. 13, two miles above Yellow Leaf Creek, and fourteen miles north-east of Clanton, Ala.

Lock No. 15 is to be located 1.7 miles below lock No. 14, three-tenths of a mile above Lower Yellow Leaf Creek, and twelve miles north-east of Clanton, Ala., on the L. & N. R. R.

Lock No. 16 is to be located 2.7 miles below lock No. 15, at Butting Ram Shoals, which is eleven miles north-east of Clanton, Ala.

Lock No. 17 is to be located 1.4 miles below lock No. 16, and is ten and a half miles north-east of Clanton, Ala.

Lock No. 18 is to be located 1.3 miles below lock No. 17, and eleven miles east of Clanton, Ala.

Lock No. 19 is to be located one mile below lock No. 18, about eleven miles east of Clanton, Ala.

Lock No. 20, 31.5 miles above Wetumpka, one-fourth mile above Zimmerman's Ferry, 1.2 miles above the mouth of Hatchet Creek.

Lock No. 21, 25.5 miles above Wetumpka, 1.6 miles below mouth of Blue Creek, 7 miles east of Cooper, Ala., on L. & N. R. R.

Lock No. 22, 21.4 miles above Wetumpka, three-fourths of a mile below the mouth of Proctors Creek, and 1.1 miles above the mouth of Pinchoulee Creek, and 7 miles east of Verbena, Ala., on the L. & N. R. R.

Lock No. 23, 18.5 miles from Wetumpka, 1.5 miles below the mouth of Pinchoulee Creek.

Lock No. 24, 16. miles above Wetumpka, 0.4 miles below the mouth of Welcree Creek, and seven and a half miles east of Mountain Creek Station, on the L. & N. R. R.

Lock No. 25, 12.9 miles above Wetumpka, 0.1 miles above the mouth of Shoal Creek, and about 8 miles east of Wadsworth, Ala., on the L. & N. R. R.

Lock No. 26, 11.7 miles above Wetumpka, at Staircase Falls, just above the mouth of Wewoka Creek.

Lock No. 27, 8.8 miles above Wetumpka, 0.6 miles above the mouth of Softkahatchee Creek, and about nine miles east of Deatsville, Ala., on the L. & N. R. R.

Lock No. 28, 7.4 miles above Wetumpka.

Lock No. 29, 4.6 miles above Wetumpka.

Lock No. 30, 2 miles above Wetumpka.

Lock No. 31, at Wetumpka, Ala.

CHAPTER IV.

1. CAHABA RIVER AT CENTERVILLE, ALABAMA.

Centerville Station, on Cahaba River, is at the Bibb county highway bridge, one-fourth of a mile west of the court house at Centerville, Ala. The bridge is a single span iron through bridge. The length of the span is about 175 feet. The floor of the bridge is 41½ feet above low water, and the stream is 130 feet wide at low water.

The initial point of sounding is at the end of the iron bridge, left bank, down stream. The gage is a wire gage, with rod fastened to the outside of down stream guard rail, and graded to feet and tenths. The gage pulley is at Station 100. Bench mark No. 1, down stream end of top of iron crossbeam under the bridge floor at Station 100, from initial point is 42.85 above gage datum.

Bench mark No. 2, top of bottom flange of same crossbeam, directly under B. M. No. 1, is 41.40 above datum of gage.

Banks are high, but overflow at time of high water.

The section is swift, and tolerably uniform, and the bottom appears to be rock.

The river observer is Mr. S. D. Hall, a merchant, who lives about a quarter of a mile from the gage.

The following discharge measurements have been made on Cahaba River at Centerville, Ala.:

1901.
April 25—Hydrographer, J. R. Hall; gage height, 5.50; discharge, 1,925 second-feet.

Aug. 7—Hydrographer, K. T. Thomas; gage height, 1.30; discharge, 399 second feet.

1902.
Jan. 25—Hydrographer, K. T. Thomas; gage height, 5.15; discharge, 1,707 second-feet.

Daily gage height of Cahaba River at Centerville, Ala, for 1901.

Day	Aug.	Sept.	Oct.	Nov.	Dec	Day	Aug.	Sept.	Oct.	Nov.	Dec
1.....		2.20	2.10	1.20	1.4	17.....	7.70	2.10	1.30	1.30	12.3
2.....		2.00	2.00	1.20	1.3	18.....	8.10	2.60	1.30	1.30	4.4
3.....		1.90	1.80	1.20	1.6	19.....	9.10	3.90	1.30	1.70	3.6
4.....		1.80	1.40	1.20	1.9	20.....	10.60	4.10	1.30	1.60	3.1
5.....		1.60	2.30	1.20	1.8	21.....	14.70	2.00	1.30	1.60	2.9
6.....		1.50	4.60	1.10	1.6	22.....	10.30	1.90	1.30	1.50	2.6
7.....	1.30	1.40	3.10	1.10	1.7	23.....	7.90	1.80	1.30	1.60	2.5
8.....	1.30	1.40	2.60	1.10	1.6	24.....	5.60	1.60	1.20	1.60	2.6
9.....	1.20	1.40	2.30	1.20	1.7	25.....	4.80	1.50	1.20	1.50	2.7
10.....	1.20	1.40	1.90	1.20	2.1	26.....	4.10	1.40	1.20	1.50	2.7
11.....	1.20	1.30	1.60	1.20	2.0	27.....	3.90	1.40	1.20	1.50	2.7
12.....	1.20	1.30	1.40	1.30	1.8	28.....	3.40	1.40	1.20	1.40	6.0
13.....	1.30	1.30	1.40	1.40	1.9	29.....	3.00	2.60	1.30	1.40	24.0
14.....	1.50	2.60	1.40	1.30	2.9	30.....	2.80	2.20	1.30	1.40	24.0
15.....	2.10	2.40	1.30	1.30	19.0	31.....	2.50		1.30		21.0
16.....	7.90	2.00	1.30	1.30	15.0						

Rating table for Cahaba River at Centerville, Alabama, for year 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.
1.1	326	4.9	1,694	8.7	3,062	12.5	4,430
1.2	362	5.0	1,730	8.8	3,098	12.6	4,466
1.3	398	5.1	1,766	8.9	3,134	12.7	4,502
1.4	434	5.2	1,802	9.0	3,170	12.8	4,538
1.5	470	5.3	1,838	9.1	3,206	12.9	4,574
1.6	506	5.4	1,874	9.2	3,242	13.0	4,610
1.7	542	5.5	1,910	9.3	3,278	13.1	4,646
1.8	578	5.6	1,946	9.4	3,314	13.2	4,682
1.9	614	5.7	1,982	9.5	3,350	13.3	4,718
2.0	650	5.8	2,018	9.6	3,386	13.4	4,754
2.1	686	5.9	2,054	9.7	3,422	13.5	4,790
2.2	722	6.0	2,090	9.8	3,458	13.6	4,826
2.3	758	6.1	2,126	9.9	3,494	13.7	4,862
2.4	794	6.2	2,162	10.0	3,530	13.8	4,898
2.5	830	6.3	2,198	10.1	3,566	13.9	4,934
2.6	866	6.4	2,234	10.2	3,602	14.0	4,970
2.7	902	6.5	2,270	10.3	3,638	14.1	5,006
2.8	938	6.6	2,306	10.4	3,674	14.2	5,042
2.9	974	6.7	2,342	10.5	3,710	14.3	5,078
3.0	1,010	6.8	2,378	10.6	3,746	14.4	5,114
3.1	1,046	6.9	2,414	10.7	3,782	14.5	5,150
3.2	1,082	7.0	2,450	10.8	3,818	14.6	5,186
3.3	1,118	7.1	2,486	10.9	3,856	14.7	5,222
3.4	1,154	7.2	2,522	11.0	3,890	14.8	5,258
3.5	1,190	7.3	2,558	11.1	3,926	14.9	5,294
3.6	1,226	7.4	2,594	11.2	3,962	15.0	5,330
3.7	1,262	7.5	2,630	11.3	3,998	15.1	5,366
3.8	1,298	7.6	2,666	11.4	4,034	15.2	5,402
3.9	1,334	7.7	2,702	11.5	4,070	15.3	5,438
4.0	1,370	7.8	2,738	11.6	4,106	15.4	5,474
4.1	1,406	7.9	2,774	11.7	4,142	15.5	5,510
4.2	1,442	8.0	2,810	11.8	4,178	15.6	5,546
4.3	1,478	8.1	2,846	11.9	4,214	15.7	5,582
4.4	1,514	8.2	2,882	12.0	4,250	15.8	5,618
4.5	1,550	8.3	2,918	12.1	4,286	15.9	5,654
4.6	1,586	8.4	2,954	12.2	4,322	16.0	5,690
4.7	1,622	8.5	2,996	12.3	4,358		

NOTE.—This table applied to the foregoing "Daily gage heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.

Minimum monthly discharge of Cahaba River at Centerville, Ala., with corresponding net horsepower per foot of fall on a water wheel realizing 80 per cent. of the theoretical power.

	1901.		
	Minimum cubic feet per second.	Minimum net H. P. per foot of fall	No. of days duration of minimum.
August	362	33	4
September	398	36	3
October	362	33	5
November	326	30	3
December	398	36	1

NOTE.—To find the minimum net horse power available at a shoal on this stream near this station, for any month, multiply the total fall of the shoal by the "net H. P. per foot of fall" in this table for that month.

2. SURVEY OF CAHABA RIVER, ALABAMA.

The Cahaba River rises near Birmingham, Alabama, and flowing in a southerly direction, enters the Alabama River at a point just below Selma, Alabama.

From the published notes of a survey made by the Corps of Engineers, U. S. A., a profile has been made beginning at the southwestern boundary of Shelby county, and running down the river a distance of 110 miles to its mouth, in which distance there is a fall of 227 feet.

A United States Geological Survey hydrographic station has been established at Centerville, Ala., and measurements of discharge have also been made at Sydenton, near Birmingham, but the measurements and observations have not extended over a sufficient length of time to give accurate estimates of discharge at all seasons. The best that can be done at present is to form an estimate of the river discharge for ordinary low stage of water at Centerville, which is 344 second-feet, and add to or subtract from this amount for other points on the river. From measurements made on the same day at Centerville and at Harrell, near the mouth of the river, we estimate that the flow at Centerville is about one-third of that at the mouth of the river.

On the accompanying profile the stations are one mile apart, and are numbered from zero at the mouth of the river, up to 110 at the Shelby county line. In the following description of powers that can be developed these mile stations will be referred to as stations:

Power No. 1.—From the head of “Half Mile Rapids” at Station 108 there is a succession of shoals known as Half Mile, Long Island, Fish Trap, Ford, Reach, and Dry Creek Shoals, in which the aggregate fall is 30 feet in $2\frac{1}{4}$ miles. There is also a fall of about 4 feet from the Shelby County line down to the head of Half Mile Shoal, making a total fall of 34 feet in four miles. This can be developed either by building a dam 34 feet high at the mouth of Dry Creek and backing the water to the Shelby County line, or by building a low dam near the head of the shoals, and a canal from it to a point opposite the mouth of Dry Creek. Such a development will give about 500 net horse-power, with an 80% turbine at ordinary low season. This power would be near Blocton, Ala.

Power No. 2.—By building a 15-foot dam at the head of “Baily Reach Rapids,” near Station 101, and near the mouth of Big Ugly Creek, to back the water to the mouth of Persimmon branch near Station 104, and constructing from this point a canal along the river bank about four miles long, to a point opposite Station 97, at the mouth of Little Cahaba River, a practical head of 54 feet can be developed. This allows 8 feet for storage and grade, as the total fall is 62 feet. A 54-foot fall would produce about 800 net H. P.

The same power can be developed by building a high dam, lower down the river, and having the canal shorter. Or, the power can be divided into two separate powers. This power site is between River Bend and Cadle, in Bibb County.

Power No. 3.—From the mouth of Little Cahaba down to Station 88½ at the top of Centerville Shoals, there is a fall of ten feet in $8\frac{1}{2}$ miles, and from the top of Centerville Shoals down to the foot of Centerville Shoals at Centerville, there is a fall of 13.6 feet in about $1\frac{3}{4}$ miles. This power can be developed by a ten-foot dam at top of Centerville Shoals, and a canal from there to Centerville $1\frac{1}{2}$ miles long. Allowing 2.6 feet for storage and canal grade, a head of 21 feet can be obtained which will give 650 net H. P.

It is probable that a much better method of development will be to erect a dam at Centerville 23.6 feet high to back the

water to the mouth of Little Cahaba. This will produce 732 net H. P., with storage. The incidental storage of such a dam would add largely to the amount and efficiency of the power. A plant running only 12 hours per day, and storing the water at night, could utilize 1,440 net H. P.

This power site is at Centerville, Alabama, on the M. & O. Railroad.

Power No. 4.—A 16-foot dam can be built at Shoal No. 9, Station 69½, in Perry County, just below the Bibb County line. This dam would back the water for 12 miles to Shoal No. 2, 4½ miles below Centerville. A 16-foot head will produce 670 H. P. without storage, or 1,340 H. P. by storing the water at night, and running only twelve hours per day. This dam site is about 17 miles below Centerville by river.

Power No. 5.—A 15-foot dam at "Blocks Cut-off," near Station 55, will back the water ten miles to the mouth of Taylor's Creek, and will produce 750 continuous, or 1,500 twelve-hour horse power.

Power No. 6.—At Shoal No. 24, Station 50, there is a fall of 9 feet in less than half a mile. A 14-foot dam at foot of this shoal, or a 5-foot dam at its head, and a short canal will develop a head—of 14 feet and realize 720 continuous, or 1,400 twelve-hour H. P.

This site is just above Burras Island, 8 or 10 miles northeast of Marion, Ala.

Power No. 7.—From Burras Island to Fikes Ferry there is a fall of 22 feet in a distance of 7 miles, 20 feet of which could probably be utilized by a dam at Fikes Ferry, producing 1,100 continuous, or 2,200 twelve-hour H. P. Fikes Ferry is near Marion, Ala.

In making the above statement of powers that can be developed, it has been assumed that there are suitable banks for dam sites. The system proposed, or some other system approximating to it, would not interfere with navigation improvements, as locks could be constructed at the dams.

CHAPTER V.

BLACK WARRIOR RIVER AND TRIBUTARIES

I. TUSCALOOSA STATION ON BLACK WARRIOR RIVER,

This gage was placed in position by the United States Corps of Engineers in 1888. It is about three-fourths of a mile from the business center of Tuscaloosa, Alabama, and is reached by passing down Bridge street to the river, thence down the east bank 1,800 feet to the gage. It consists of an inclined timber, 2x6 inches, supported on posts and graduated by means of notches placed 1 foot vertically apart. The observer is W. S. Wyman, Jr., Tuscaloosa, Alabama. Mr. Wyman is observer for the Corps of Engineers, and has been kind enough to send weekly reports to this office. Observations are taken daily at 7 A. M. The area draining past this point is 4,900 square miles.

The bench marks are fixed, one on a willow 10 feet west of gage, 97.84 feet above Mobile datum, the other on a small hackberry 30 feet south of the upper end of the gage and 139.36 feet above Mobile datum. The current here is rather sluggish, being almost imperceptible at low stages. Both banks are of earth, and subject to overflow. Observations of gage heights have been obtained through the courtesy of Mr. R. C. McCalla, Jr., of the United States Engineers in charge of the Black Warrior River, from the time the gage was established until December 31, 1896. A measurement made by Mr. McCalla September 14, 1896, showed a gage height of -0.60 foot area, 1,022 square feet, mean velocity 0.16, discharge 164 second-feet.

The following list of measurements at the same place has been furnished by Mr. Horace Harding, C. E., United States assistant engineer, 2016 Quinlan avenue, Birmingham, Alabama. Velocities were obtained by means of rod floats reaching from the water surface to near the bottom. The highest flood occurred on April 8, 1892. The gage height was 62.5, the sectional area 33,600 square feet, and the estimated mean velocity 4.5 feet per second. This gave a discharge of 151,200 cubic feet per second. From this estimate and the following list of measurements a curve has been plotted and a rating table constructed, and this rating table applied to all gage heights observed. The estimates of discharge thus obtained are shown in diagrammatic form in Plate V. The highest discharges are merely approximations, but the discharges shown by the diagrams serve as a basis for comparison of the state of the river during the various years.

List of Discharge Measurements made on Black Warrior River at Tuscaloosa, Alabama.

No.	Date.	Gage height.	Discharge.	Remarks.
	1895.	<i>Feet.</i>	<i>Second-feet.</i>	
1	Dec. 17	1.10	617	Stationary.
2	Dec. 21	2.61	1,344	Do.
3	Dec. 24	3.60	1,733	Rising slowly.
	1896.			
4	Jan. 30	9.99	5,073	Falling 0.05 per hour.
5	Jan. 31	8.65	4,363	Do.
6	Feb. 26	8.25	4,360	Falling 0.01 per hour.
7	Feb. 28	7.27	3,657	Falling 0.02 per hour.
8	Feb. 29	6.92	3,522	Stationary.
9	Mar. 2	7.67	4,211	Do.
10	Mar. 3	7.28	3,632	Falling 0.03 per hour.
11	Mar. 6	6.94	4,558	Rising 0.15 per hour.
12	Mar. 24	24.85	13,550	Falling 0.12 per hour.
13	Apr. 10	9.71	5,331	Falling.
14	Apr. 11	8.89	4,755	Do.
15	Apr. 14	8.25	4,675	Rising.
16	Apr. 20	7.55	3,862	Falling.
17	Apr. 21	6.65	3,388	Do.
18	Apr. 22	5.96	2,940	Do.
19	Apr. 23	5.46	2,704	Do.
20	Apr. 24	5.88	3,158	Rising.
21	Apr. 27	5.68	3,049	Do.

Daily gage height of Black Warrior River at Tuscaloosa, Ala., for 1889.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	15.00	23.50	18.80	8.50	8.80	2.30	2.40	3.70	0.75	2.40	0.90	6.00
2.....	19.50	20.50	16.50	9.80	14.50	2.90	3.10	3.60	7.30	1.95	1.05	5.65
3.....	18.00	17.50	25.00	10.30	13.20	2.75	4.40	3.00	6.40	1.55	1.85	5.30
4.....	16.00	14.80	31.50	11.60	11.00	2.50	5.10	2.95	5.30	1.30	1.90	4.80
5.....	25.00	13.00	29.40	10.50	8.50	2.30	6.25	2.90	6.20	1.15	3.85	4.50
6.....	33.00	11.50	26.50	9.50	7.00	2.10	6.85	3.70	9.30	1.05	3.65	4.20
7.....	33.50	10.40	23.00	8.40	5.80	1.90	6.45	3.45	14.90	.90	3.30	4.00
8.....	29.50	9.30	20.10	7.30	4.60	1.70	5.70	2.95	19.00	.70	3.00	3.80
9.....	26.80	8.30	17.50	6.80	4.30	2.00	4.75	2.60	14.00	.50	2.75	3.60
10.....	28.40	8.00	15.00	6.40	4.00	2.60	3.85	2.00	9.90	.40	2.55	3.40
11.....	29.00	7.80	12.80	6.30	3.80	2.85	3.05	1.75	5.50	.30	3.65	3.20
12.....	25.50	7.60	11.00	6.00	3.20	4.20	2.85	1.55	5.25	.30	4.30	2.95
13.....	22.50	7.30	10.00	5.60	3.00	3.40	2.45	3.85	4.15	.20	4.15	2.75
14.....	19.00	7.00	9.20	5.50	3.10	4.00	2.15	3.60	3.30	.15	3.75	2.70
15.....	16.00	7.30	8.80	8.00	3.20	3.45	1.95	3.35	2.70	.15	3.50	2.65
16.....	13.60	27.50	8.10	16.80	3.00	3.25	4.20	3.15	2.25	.15	4.20	2.50
17.....	29.00	49.00	7.20	16.70	2.80	3.05	7.35	3.80	2.00	.10	5.20	2.30
18.....	40.50	56.40	7.10	14.00	2.50	2.85	11.35	3.50	1.00	.10	12.45	2.20
19.....	38.50	56.60	11.00	12.00	2.35	2.65	11.50	3.20	1.40	.05	18.90	2.10
20.....	34.00	53.00	12.50	10.00	2.25	2.45	8.40	2.90	1.30	.05	16.90	2.05
21.....	30.30	47.00	12.30	8.90	2.05	2.25	4.60	2.40	1.20	.05	14.10	2.00
22.....	28.10	41.50	11.80	8.00	1.85	3.25	4.55	1.90	1.10	.00	11.70	2.00
23.....	26.30	36.50	10.80	7.00	1.65	3.45	4.50	1.50	1.00	—	9.70	2.00
24.....	23.10	32.50	10.00	6.40	1.50	3.20	3.70	1.20	1.00	—	7.90	2.00
25.....	21.00	28.50	9.80	6.30	1.30	3.00	3.15	.90	.95	—	6.60	1.95
26.....	20.40	26.50	11.20	6.80	1.25	2.40	3.10	.75	2.25	+	6.30	1.95
27.....	25.00	23.50	11.80	6.50	1.15	1.95	4.55	1.00	3.70	.35	6.10	1.95
28.....	33.50	21.40	12.30	6.20	1.05	1.55	4.00	.95	3.50	.35	5.90	1.90
29.....	33.80	.....	11.00	5.80	.95	1.25	4.00	.90	3.25	.40	5.80	1.90
30.....	30.00	.....	10.50	5.50	1.15	1.10	4.00	1.10	2.60	.90	6.30	3.00
31.....	27.00	.....	9.80	.....	1.10	....	3.80	1.05	.....	1.00	.....	4.85

Daily gage height of Black Warrior River at Tuscaloosa, Ala., for 1890.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	7.70	30.20	58.90	24.50	16.70	7.75	1.80	5.00	8.00	9.30	3.75	1.00
2.....	7.20	26.20	57.40	34.50	13.70	6.50	1.65	4.05	5.80	7.40	3.35	1.00
3.....	6.20	22.50	52.40	34.10	11.95	5.65	1.45	3.25	4.35	6.10	3.10	1.00
4.....	5.20	19.05	45.80	43.60	12.75	5.00	1.25	2.85	3.40	5.10	2.85	1.00
5.....	5.20	16.40	40.85	45.90	14.65	4.40	1.10	3.15	3.10	4.40	2.55	1.00
6.....	4.80	13.90	37.15	44.50	16.50	4.00	.80	3.35	3.85	3.80	2.40	1.00
7.....	4.50	12.10	35.40	38.70	15.00	5.20	.60	3.75	4.35	3.50	2.25	1.20
8.....	4.55	44.30	32.60	34.00	13.50	5.60	.50	4.55	4.80	3.45	2.15	10.05
9.....	5.10	53.95	30.50	29.95	11.95	5.40	.45	4.30	2.85	4.50	2.05	10.10
10.....	5.30	52.90	27.50	26.70	10.10	5.25	.30	4.30	3.20	4.45	2.00	8.95
11.....	5.60	47.50	25.00	23.45	9.30	5.00	.20	6.10	2.90	4.10	1.95	7.70
12.....	5.45	42.20	23.00	20.45	8.35	6.00	.15	6.40	3.45	3.80	1.75	5.80
13.....	5.30	37.20	20.75	17.45	8.35	6.20	.05	5.30	3.95	3.50	1.65	4.60
14.....	5.20	32.65	22.50	14.50	9.00	6.20	1.05	4.50	5.80	3.20	1.60	3.70
15.....	5.60	29.45	38.20	12.15	8.75	5.60	2.55	3.20	5.55	2.80	1.60	3.30
16.....	11.20	26.95	38.00	10.65	8.65	6.05	3.10	2.80	4.50	2.70	1.55	2.95
17.....	19.30	23.95	35.80	10.35	9.50	4.35	3.55	2.50	3.55	2.60	1.65	2.80
18.....	21.00	21.45	32.30	12.95	8.90	4.30	3.65	2.70	2.90	2.40	1.60	2.75
19.....	18.40	18.45	29.00	13.20	8.15	4.20	4.15	2.55	2.45	2.30	1.55	2.20
20.....	15.40	15.65	27.20	13.95	7.95	3.70	4.75	2.40	2.10	2.10	1.50	2.00
21.....	13.30	13.45	32.40	12.15	7.95	3.20	4.20	2.20	1.75	2.00	1.50	2.00
22.....	11.60	12.00	34.45	10.45	9.00	2.80	3.00	1.80	1.70	2.45	1.45	1.90
23.....	10.10	10.40	41.25	9.30	8.40	2.50	2.10	1.40	3.05	4.90	1.25	1.90
24.....	10.70	9.40	40.25	10.65	7.65	2.25	1.75	1.10	3.10	8.45	1.30	1.80
25.....	12.50	9.50	36.75	15.45	6.95	2.25	2.75	1.00	13.05	10.55	1.25	1.80
26.....	13.50	13.50	33.35	26.50	6.85	2.15	12.65	.95	23.90	9.60	1.20	2.30
27.....	12.80	35.20	29.70	28.45	9.60	2.55	13.40	.95	22.65	8.05	1.15	6.80
28.....	11.80	53.10	27.45	26.20	13.20	2.25	10.00	5.10	18.00	6.45	1.10	9.70
29.....	10.60	.....	24.55	23.35	13.55	2.05	9.30	9.55	14.70	5.30	1.05	10.20
30.....	17.60	.....	21.95	19.80	11.95	1.90	7.45	9.15	11.90	4.90	1.00	9.10
31.....	31.70	.....	18.80	.....	9.25	....	6.50	10.45	.....	4.15	.....	7.30

Daily gage height of Black Warrior River at Tuscaloosa, Ala., for 1891.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	6.10	33.20	24.00	34.00	5.70	1.80	2.10	6.50	1.00	-0.40	-0.80	3.40
2.....	8.60	39.60	23.50	39.40	5.50	1.90	2.00	13.00	1.00	-.30	-.80	3.00
3.....	14.30	40.90	20.50	36.80	5.30	1.80	1.90	14.80	1.00	-.20	-.80	2.40
4.....	17.90	40.20	19.60	32.50	4.90	1.70	1.80	16.00	.80	-.20	-.80	6.20
5.....	15.20	39.30	17.20	28.50	4.50	1.50	1.50	13.00	.70	-.20	-.80	6.80
6.....	13.10	36.30	29.00	25.00	4.50	1.40	1.30	9.50	.60 &	-.20	-.80	21.50
7.....	11.10	37.00	53.00	22.20	4.20	1.40	1.40	7.40	.60	-.40	-.80	19.50
8.....	10.00	51.50	58.00	19.00	4.00	1.50	2.10	5.80	.60	-.50	-.80	20.00
9.....	9.50	51.60	60.40	16.00	3.90	2.10	7.00	5.40	.60	-.60	-.80	20.50
10.....	17.50	52.20	58.00	14.20	3.50	2.80	10.40	3.70	.60	-.70	+.70	17.00
11.....	20.90	53.50	54.00	17.20	3.20	3.50	8.20	3.10	.70	-.80	2.10	14.00
12.....	26.20	50.50	48.00	27.00	3.20	10.20	6.00	2.70	1.00	-.80	2.80	11.50
13.....	30.10	47.60	43.00	26.00	3.10	10.50	4.30	2.50	1.20	-.80	4.40	9.00
14.....	25.50	51.40	40.00	22.50	3.00	9.80	3.20	3.00	1.20	-.80	3.80	6.20
15.....	21.00	49.50	36.50	19.50	2.80	8.00	2.30	3.40	1.00	-.60	2.50	7.00
16.....	18.50	46.50	33.20	17.20	2.60	6.50	2.60	4.00	1.00	-.70	2.00	9.00
17.....	17.10	44.30	30.00	15.60	2.50	5.60	2.60	3.00	.60	-.70	1.80	11.00
18.....	17.70	41.00	28.00	16.40	2.50	6.30	2.90	2.60	.20	-.70	1.80	11.20
19.....	17.10	37.50	26.40	14.50	2.50	7.20	2.60	2.20	.10	-.60	1.50	10.00
20.....	15.60	35.00	24.00	13.40	2.50	7.00	2.20	2.00	.10	-.70	1.30	8.50
21.....	12.60	33.50	21.00	12.00	2.50	6.00	1.80	1.50	.10	-.70	1.40	7.00
22.....	20.20	39.50	19.90	11.00	2.70	5.50	1.60	1.30	.10	-.60	3.00	6.00
23.....	31.60	41.00	17.50	10.00	3.00	5.20	1.40	1.40	.10	-.60	8.00	6.00
24.....	31.80	39.00	15.00	9.00	3.00	4.80	1.30	1.30	.10	-.50	12.30	6.20
25.....	30.10	36.50	12.50	8.20	2.80	4.50	1.40	1.20	.00	-.50	13.30	7.50
26.....	30.70	33.00	12.10	7.60	2.60	4.20	2.60	1.10	.00	-.50	10.80	13.20
27.....	29.00	29.00	15.00	8.40	2.50	4.10	2.00	1.10	-.20	-.70	7.20	31.00
28.....	26.80	26.50	18.20	8.00	2.40	3.70	2.20	1.00	-.20	-.80	5.80	38.90
29.....	23.70	.....	19.40	7.30	2.30	2.90	2.00	1.00	-.40	-.80	4.20	31.20
30.....	32.70	.....	18.00	6.50	2.10	2.50	2.10	1.10	-.50	-.80	3.80	27.00
31.....	33.00	.....	17.00	.....	2.00	.....	2.40	1.00	.....	-.80	.....	22.10

Daily gage height of Black Warrior River at Tuscaloosa, Ala., for 1892.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	17.90	21.20	10.70	21.80	12.00	3.40	4.60	4.80	9.30	3.90	0.40	5.90
2.....	15.90	10.50	10.30	18.30	11.20	3.20	3.90	3.20	7.60	3.50	.40	5.60
3.....	18.50	9.40	9.70	15.50	9.90	3.50	3.40	7.00	6.50	3.30	1.20	5.30
4.....	18.70	8.50	8.80	15.20	8.80	3.70	3.00	7.40	5.60	3.10	1.60	4.90
5.....	16.40	7.80	8.00	12.00	7.20	3.50	2.90	6.60	4.90	2.80	1.60	6.30
6.....	14.60	7.40	7.80	11.60	6.50	4.70	3.50	5.40	4.90	2.50	1.60	7.50
7.....	13.00	7.80	8.00	56.30	5.90	5.00	5.20	4.80	4.80	2.40	2.00	7.50
8.....	11.60	7.50	16.50	63.20	5.30	4.90	11.00	3.90	6.40	2.20	3.90	12.20
9.....	10.80	9.00	26.80	62.20	5.20	4.10	26.70	3.60	6.20	2.10	4.60	15.00
10.....	10.50	16.00	28.50	58.00	4.90	4.00	43.50	3.50	5.40	2.00	8.90	13.20
11.....	25.70	13.00	26.70	52.30	4.90	3.80	46.20	3.00	5.10	2.00	10.90	11.00
12.....	34.80	11.30	22.00	45.40	4.80	3.50	41.40	3.00	3.90	2.00	8.30	9.40
13.....	53.00	10.80	18.00	40.70	4.70	3.30	38.30	3.30	3.40	2.00	7.60	8.00
14.....	57.40	9.50	15.80	36.50	4.60	2.80	37.50	3.10	3.30	1.90	5.80	7.40
15.....	55.90	9.00	13.80	32.80	4.50	2.50	34.80	3.90	4.00	1.90	5.00	8.60
16.....	51.70	10.00	13.30	29.50	4.00	2.40	32.80	3.50	5.10	1.90	4.50	10.30
17.....	45.00	11.80	11.20	27.00	3.70	2.00	41.40	3.50	4.90	1.80	4.00	13.10
18.....	40.10	11.00	12.90	24.50	3.60	1.80	38.00	6.00	4.30	1.70	4.20	26.70
19.....	36.60	9.90	24.00	22.40	4.30	2.10	33.00	9.50	6.00	1.00	4.40	28.40
20.....	41.50	10.50	25.50	20.20	4.60	3.90	29.00	11.50	18.30	1.00	4.70	28.40
21.....	41.00	13.50	22.90	18.10	6.50	7.40	28.30	9.50	23.90	.90	5.00	36.50
22.....	36.80	18.00	20.00	15.90	6.30	10.80	29.30	7.40	20.90	.90	4.80	35.80
23.....	34.40	23.90	18.30	13.80	6.00	10.70	25.10	10.20	17.00	.90	4.60	31.50
24.....	31.00	21.20	22.00	12.30	6.00	8.40	21.50	12.30	13.30	1.00	4.20	27.00
25.....	28.50	18.50	29.00	11.30	4.80	7.80	18.80	14.00	10.50	1.00	3.80	23.00
26.....	26.00	16.00	32.00	10.50	3.50	7.90	15.80	14.20	8.00	.90	3.50	19.50
27.....	23.80	14.00	35.80	8.80	4.70	7.20	13.00	13.20	6.10	.80	3.30	16.00
28.....	21.50	12.50	34.00	7.90	4.00	6.10	10.50	11.50	5.00	.70	3.20	13.60
29.....	19.00	11.50	30.50	7.70	3.80	5.20	7.80	12.00	4.90	.70	3.90	11.40
30.....	16.80	.....	26.80	10.50	3.50	5.40	6.20	11.50	4.30	.50	5.90	9.80
31.....	14.00	.....	23.90	.....	3.50	.....	5.50	10.50	.....	.50	.....	8.50

Daily gage height of Black Warrior River at Tuscaloosa, Ala., for 1893.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	8.20	18.10	23.00	9.40	24.50	12.50	2.50	0.60	0.30	1.10	0.40	1.50
2.....	8.60	15.90	21.70	9.30	21.20	33.50	2.50	.70	.20	1.00	.40	1.50
3.....	9.80	14.00	19.70	9.00	30.00	49.60	2.80	1.00	.10	1.20	.40	1.80
4.....	10.70	12.80	20.50	8.70	51.20	46.00	3.60	1.20	.00	1.40	.40	2.80
5.....	10.10	12.50	23.00	8.00	52.20	39.00	3.60	1.30	—	1.30	.40	3.50
6.....	9.00	11.80	24.00	8.70	48.00	37.70	3.20	1.20	—	1.20	.40	4.20
7.....	8.40	11.20	22.60	9.30	42.90	39.90	2.70	1.30	.00	1.20	.40	4.10
8.....	7.90	10.80	20.10	9.00	40.40	39.30	2.40	1.20	+.20	1.20	.40	3.50
9.....	7.00	10.60	20.00	8.30	37.40	34.00	2.10	1.00	1.40	1.00	.40	3.00
10.....	6.70	10.20	22.00	7.60	34.30	29.20	1.80	.90	2.00	.90	.60	2.80
11.....	6.20	12.00	21.80	7.00	30.80	25.10	1.60	.90	2.10	.80	.60	2.30
12.....	6.50	23.90	20.50	6.40	27.50	21.20	1.60	.80	2.20	.80	.50	1.90
13.....	7.80	28.30	19.30	6.10	24.40	17.40	2.20	.90	3.20	.80	.50	1.70
14.....	9.00	27.00	18.10	5.80	21.90	14.70	2.60	3.60	4.30	.70	.60	1.60
15.....	9.60	25.90	16.30	23.00	19.10	11.60	2.40	4.90	4.30	.70	.60	1.50
16.....	11.40	52.20	14.70	27.10	16.20	9.60	2.00	5.10	3.90	.60	.60	1.70
17.....	12.20	55.60	13.20	24.00	14.00	7.60	1.70	4.70	3.30	.50	.60	2.30
18.....	11.80	54.70	12.20	20.00	11.90	6.70	1.40	3.70	2.50	.50	.60	2.40
19.....	12.00	51.40	11.30	16.40	11.00	6.50	1.30	2.80	2.10	.50	.60	2.30
20.....	12.40	46.50	10.70	13.90	8.40	6.90	1.20	2.20	1.80	.50	.60	2.10
21.....	11.80	41.80	9.90	12.00	6.90	6.90	1.20	1.70	1.40	.50	.70	2.50
22.....	10.90	37.90	9.30	11.20	6.20	6.60	1.30	1.50	1.30	.50	1.00	2.40
23.....	11.20	34.50	8.80	10.70	5.60	6.40	1.00	1.30	1.20	.40	1.00	2.30
24.....	12.90	31.30	12.30	9.90	5.10	5.70	1.70	1.10	1.00	.40	1.10	2.10
25.....	15.90	28.40	22.20	8.90	4.80	4.90	1.50	1.00	1.30	.40	1.00	1.90
26.....	19.20	25.90	22.50	7.00	4.50	4.40	1.30	.90	1.20	.40	.90	1.70
27.....	22.00	23.80	20.00	10.50	4.30	4.00	1.20	.80	1.20	.40	1.00	1.60
28.....	23.30	23.00	17.00	32.50	5.10	3.50	.90	.80	1.10	.40	1.70	1.50
29.....	23.10	.....	14.40	33.90	6.10	3.10	.90	.60	1.10	.40	1.70	1.40
30.....	22.10	.....	12.40	29.00	12.90	2.80	.80	.50	1.10	.40	1.50	3.70
31.....	20.40	.....	10.90	.....	14.10	.....	.80	.20	.....	.40	.....	7.60

Daily gage height of Black Warrior River at Tuscaloosa, Ala., for 1894.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	10.30	8.50	27.00	11.40	6.50	1.70	2.50	1.20	5.80	0.55	—0.05	—0.05
2.....	9.60	7.80	25.60	14.10	5.90	1.60	1.80	1.30	4.60	.45	—10	—0.05
3.....	7.90	7.30	23.60	23.50	5.90	1.50	1.35	1.40	3.60	.40	—20	.00
4.....	6.20	7.90	21.00	24.00	5.80	1.35	1.10	1.95	2.95	.32	—25	.00
5.....	5.40	16.90	18.20	22.20	5.50	1.33	.80	2.30	2.45	.25	—30	.00
6.....	6.40	22.60	15.90	20.60	5.20	1.20	.60	2.40	2.05	.20	—30	.00
7.....	16.80	20.40	14.80	18.90	5.10	1.20	1.00	2.00	1.85	.15	—30	.00
8.....	22.60	17.80	14.40	16.30	4.90	1.10	1.30	1.60	1.75	.00	—30	+.05
9.....	19.70	17.30	13.80	14.70	4.50	.95	.70	1.30	1.65	.10	—30	.05
10.....	26.90	26.00	12.60	15.70	4.10	.90	.70	1.10	1.60	.20	—30	.50
11.....	34.50	27.80	11.60	25.00	3.70	.80	.60	.80	1.85	.25	—30	2.10
12.....	35.80	25.40	11.50	25.00	3.90	.80	.60	.70	3.40	.30	—30	5.70
13.....	30.90	29.90	16.50	22.70	4.30	.70	.50	.60	5.60	.30	—30	10.40
14.....	25.80	32.10	17.30	19.50	7.00	.60	.50	.50	7.50	.30	—10	11.20
15.....	22.20	29.70	15.80	16.30	6.20	.60	.60	.35	5.70	.30	.00	8.90
16.....	23.60	26.00	15.50	15.50	5.70	.60	.70	.60	4.20	.30	+.05	6.40
17.....	24.80	22.30	33.10	16.00	5.10	.55	.75	.55	3.25	.30	.05	4.90
18.....	22.40	19.10	36.70	17.00	5.00	.50	.70	.45	3.50	.30	.05	3.90
19.....	19.30	16.80	33.70	25.30	4.70	.60	.70	.40	3.25	.30	.00	3.20
20.....	15.90	16.00	29.50	24.80	4.20	.70	.60	.55	3.25	.30	.10	2.90
21.....	14.10	16.90	27.80	24.00	3.60	.85	.50	1.00	4.10	.30	.10	2.60
22.....	18.60	17.90	29.30	20.40	3.10	.80	.90	1.35	3.60	.30	.10	2.20
23.....	21.30	17.00	29.60	17.30	2.80	.95	1.30	3.80	2.90	.30	.10	2.60
24.....	19.90	16.10	28.00	14.20	2.60	1.10	1.35	5.30	2.20	.35	.00	1.80
25.....	17.60	17.30	27.80	12.20	2.40	1.00	1.60	9.20	1.75	.40	.00	1.70
26.....	15.50	29.30	25.30	10.50	2.30	1.05	1.50	16.00	1.45	.40	.00	2.00
27.....	14.00	31.00	22.10	9.80	2.10	1.40	1.40	20.40	1.20	.45	.05	7.70
28.....	12.40	28.80	19.00	8.70	2.10	1.70	1.30	16.00	1.05	.45	.05	9.70
29.....	11.10	.....	16.10	7.90	2.00	2.35	.20	11.80	.90	.45	.05	8.40
30.....	10.00	.....	14.30	7.00	1.90	2.60	1.10	8.30	.70	.20	.05	7.20
31.....	9.10	.....	12.70	.....	1.90	.....	1.20	6.80	.....	.05	.05	6.50

Daily gage height of Black Warrior River at Tuscaloosa, Ala., for 1895.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	6.10	24.10	8.60	16.20	15.20	7.00	4.80	1.80	1.90	0.10	-0.04	0.75
2.....	5.40	21.50	13.20	14.50	13.00	5.90	4.50	1.50	1.80	.00	+ .07	.95
3.....	6.80	21.40	35.30	12.60	11.00	5.10	5.40	1.30	1.80	-.07	.12	1.05
4.....	9.00	21.40	36.70	11.00	9.40	4.60	7.60	1.20	1.70	-.10	.09	1.00
5.....	8.80	19.90	32.40	10.20	8.30	4.20	17.40	1.20	1.90	-.10	.11	.90
6.....	8.00	17.90	27.80	8.40	7.40	6.70	17.70	1.20	2.60	-.10	.25	1.30
7.....	7.40	16.50	23.80	7.90	7.00	5.70	18.40	1.10	3.05	-.10	.31	1.50
8.....	35.00	16.80	20.60	20.50	8.20	5.10	15.70	1.00	3.70	.00	.30	1.45
9.....	50.60	16.90	20.10	24.00	13.50	4.30	13.10	.90	3.40	-.03	.28	1.90
10.....	49.30	15.80	19.30	21.20	19.70	3.80	11.10	.97	2.90	-.07	.70	1.80
11.....	45.10	14.60	17.50	18.00	23.30	3.10	9.80	1.40	2.40	-.10	1.20	1.45
12.....	40.10	14.10	17.20	15.10	22.00	2.70	7.90	1.50	2.20	-.14	1.10	1.40
13.....	35.00	13.90	18.40	12.60	18.50	2.40	6.50	1.40	2.10	-.14	1.18	1.40
14.....	29.80	12.80	24.90	11.00	15.20	2.20	5.30	1.30	2.00	+.06	1.35	1.37
15.....	25.70	11.60	37.50	9.50	12.20	2.00	5.40	1.10	1.80	.04	1.35	1.33
16.....	23.40	10.50	47.40	8.60	9.70	2.00	5.60	1.30	1.60	-.08	1.23	1.23
17.....	31.20	9.40	52.00	10.00	8.00	2.70	5.90	1.40	1.40	-.18	1.20	1.12
18.....	32.90	9.00	47.30	15.90	6.90	3.30	5.80	2.00	1.40	-.27	1.05	1.05
19.....	29.20	9.00	42.10	15.80	6.30	4.20	5.10	4.00	1.30	-.31	.88	1.02
20.....	25.80	9.50	38.80	14.00	5.90	4.90	4.60	4.30	1.00	-.37	.82	1.57
21.....	23.10	10.20	48.70	12.00	5.30	4.70	4.00	3.60	1.20	-.42	.70	2.55
22.....	21.60	10.90	51.30	10.40	4.80	4.30	3.60	2.80	1.50	-.45	.60	2.60
23.....	21.60	11.40	47.60	8.90	4.30	4.10	3.40	2.40	1.30	-.50	.50	3.03
24.....	19.80	11.30	42.10	8.00	4.10	3.70	3.30	4.30	1.10	-.35	.75	3.65
25.....	17.40	10.90	37.30	7.20	4.00	3.40	3.60	4.90	.80	-.33	.60	3.31
26.....	16.70	10.30	32.80	7.00	4.30	3.00	3.70	4.00	.60	-.53	.38	4.50
27.....	20.00	9.70	29.10	7.10	5.60	4.40	3.30	3.20	.35	-.70	.64	10.40
28.....	21.20	9.00	26.10	12.50	11.00	5.40	2.90	2.40	.10	-.68	.65	21.02
29.....	22.00		23.60	15.00	13.30	6.00	2.40	2.30	.50	-.67	.65	16.88
30.....	27.40		21.10	16.40	11.20	5.40	2.00	2.10	.30	-.50	.60	13.10
31.....	27.10		18.60		8.90		2.10	2.00		-.32		11.67

Daily gage height of Black Warrior River at Tuscaloosa, Ala., for 1896.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	11.41	7.92	6.91	10.61	18.24	4.92	1.94	.53	.38	-.52	-.78	7.70
2.....	10.26	8.51	7.66	14.78	33.30	4.28	1.71	.80	.25	-.62	-.77	6.32
3.....	8.90	21.98	7.41	23.00	37.18	3.50	1.44	1.34	.15	-.66	-.42	4.63
4.....	7.60	33.12	6.74	23.50	30.88	5.44	1.48	.89	.05	-.20	-.39	3.40
5.....	6.55	30.02	6.14	19.85	26.40	5.24	1.30	.54	-.06	+.78	-.33	2.60
6.....	5.74	30.75	6.64	16.70	21.93	4.30	1.15	.42	-.15	.74	-.19	2.05
7.....	5.09	35.92	10.18	14.26	1.88	3.62	1.32	.50	-.23	.68	-.19	1.70
8.....	5.24	35.08	12.04	12.55	13.95	3.27	2.20	.60	-.30	.40	-.17	1.47
9.....	5.76	36.21	14.89	11.20	10.80	6.60	8.40	.68	-.37	.09	-.18	1.21
10.....	6.46	36.52	13.69	10.02	8.60	8.18	6.98	.64	-.44	-.15	-.21	1.10
11.....	6.58	33.65	12.45	9.04	7.11	18.39	5.37	.55	-.44	-.28	-.30	.89
12.....	6.25	29.45	13.97	8.33	6.09	15.13	3.95	.45	-.46	-.28	-.20	.84
13.....	5.79	25.97	16.15	7.62	5.34	10.77	2.99	.38	-.50	-.48	-.22	.80
14.....	5.26	27.41	15.35	7.86	4.77	7.66	2.45	.35	-.60	-.49	-.11	.75
15.....	4.82	33.25	13.56	11.65	6.13	5.60	2.16	.31	-.59	-.46	-.10	1.20
16.....	4.87	31.02	13.86	13.90	5.45	4.23	2.13	.26	-.59	-.43	-.01	1.25
17.....	6.03	27.30	22.30	12.36	4.65	4.74	2.15	.13	-.60	-.60	+.26	1.25
18.....	8.61	23.65	27.75	10.57	3.94	4.20	2.42	.40	-.60	-.63	.46	1.60
19.....	9.14	20.09	29.70	9.03	3.44	6.18	2.46	.50	-.60	-.78	.52	1.90
20.....	8.53	17.00	37.68	7.81	3.05	6.00	2.24	.40	-.61	-.82	.45	1.70
21.....	7.87	14.45	37.92	6.88	2.91	5.32	2.16	.34	-.64	-.82	.39	1.50
22.....	8.85	12.20	33.55	6.15	2.77	4.91	1.90	.29	-.64	-.84	.38	1.33
23.....	22.47	10.37	19.12	5.56	2.87	4.46	1.71	.22	-.26	-.84	.38	1.20
24.....	29.26	9.13	25.85	5.67	2.90	4.19	2.06	1.06	-.45	-.78	.37	.98
25.....	26.52	8.60	23.54	5.76	2.87	4.04	2.53	.95	-.61	-.80	.37	.92
26.....	22.44	8.35	21.28	5.30	2.97	3.37	2.17	.79	-.64	-.82	.37	.77
27.....	18.55	7.90	18.72	5.26	3.66	2.85	1.70	.77	-.71	-.82	.98	.71
28.....	14.92	7.40	16.35	10.47	3.59	2.69	1.28	.135	-.76	-.78	.09	.59
29.....	12.14	7.00	14.30	16.06	6.57	2.54	.94	1.30	-.67	-.80	.33	.52
30.....	10.18		12.69	14.18	6.50	2.21	.76	.95	-.55	-.80	1.00	.48
31.....	8.88		11.40		5.78		.64	.60		-.78		.48

The following discharge measurement was made by B. M. Hall in 1897, at Tuscaloosa, Ala.:

January 12, gage height, 1.70 feet; discharge, 829 second-feet.

Daily gage height of Black Warrior River at Tuscaloosa, Ala., for 1897.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	0.34	3.90	11.14	13.90	9.51	1.83	-0.15	1.36	0.60	-1.65	-1.39	-1.28
2.....	.47	6.00	9.57	15.28	9.95	1.75	-.18	1.08	.96	-1.71	-1.30	-1.12
3.....	.40	11.50	8.58	22.20	9.22	1.70	-.20	.87	1.02	-1.72	-1.29	-.48
4.....	.90	12.60	8.72	21.11	7.66	2.01	-.18	.62	.92	-1.75	-1.31	+1.29
5.....	1.24	11.70	10.14	22.00	6.23	1.98	-.05	.50	.76	-1.79	-1.33	13.10
6.....	1.11	12.37	16.33	26.95	5.36	2.65	1.63	.40	.62	-1.86	-1.28	14.24
7.....	1.40	16.24	51.42	25.32	4.67	3.44	3.40	.25	.51	-1.79	-1.27	10.72
8.....	2.60	18.70	54.77	22.10	4.20	2.87	3.90	.24	.47	-1.85	-1.27	7.39
9.....	2.66	21.04	51.59	21.30	3.87	2.25	3.71	1.10	.42	-1.88	-1.17	5.12
10.....	2.30	19.80	44.69	29.27	3.50	1.85	3.05	2.10	.36	-1.90	-1.13	3.72
11.....	2.03	17.90	40.54	29.57	3.20	1.60	2.53	3.26	.29	-1.90	-1.10	3.05
12.....	1.76	23.42	42.53	25.48	3.64	1.39	2.42	3.22	.23	-1.88	-1.14	2.70
13.....	1.52	25.90	48.70	21.60	11.40	1.24	2.16	2.73	.14	-1.89	-1.17	2.56
14.....	1.33	23.84	50.96	18.10	20.36	1.11	1.86	2.27	.11	-1.92	-1.25	3.05
15.....	1.23	20.30	48.57	16.32	20.46	.95	1.46	1.63	.10	-1.92	-1.25	3.54
16.....	8.23	16.96	45.20	18.43	16.59	.85	1.16	1.28	.06	-1.92	-1.27	4.12
17.....	9.70	14.04	47.21	18.33	12.68	.75	.97	1.00	.01	-1.90	-1.33	4.10
18.....	13.10	11.72	46.72	15.92	9.77	.63	1.50	.73	-.05	-1.90	-1.35	3.78
19.....	19.35	9.97	42.90	13.66	7.73	1.30	3.50	.52	-.36	-1.90	-1.36	3.50
20.....	18.70	8.77	42.57	11.86	6.35	1.46	12.50	1.53	-.75	-1.88	-1.36	3.82
21.....	17.43	8.08	44.54	10.45	5.37	1.11	14.50	1.78	-.95	-1.88	-1.36	6.70
22.....	18.64	8.32	41.50	9.24	4.66	.80	11.30	1.58	-1.07	-1.77	-1.37	10.58
23.....	16.52	11.00	37.70	8.15	4.13	.55	8.42	1.33	-1.17	-1.64	-1.42	31.00
24.....	13.30	20.20	35.66	7.37	3.70	.33	6.64	1.08	-1.26	-1.58	-1.44	23.96
25.....	10.60	21.24	32.40	6.80	3.45	.23	4.77	1.27	-1.24	-1.63	-1.40	24.68
26.....	8.60	18.97	23.86	6.37	3.13	.16	3.46	.97	-1.36	-1.63	-1.36	18.97
27.....	7.20	16.18	25.60	5.90	2.90	.12	2.72	.80	-1.41	-1.61	-1.36	15.67
28.....	6.00	13.31	23.15	5.49	2.60	.03	2.92	.61	-1.44	-1.64	-1.28	13.10
29.....	5.10	.....	20.33	5.10	2.28	.00	2.15	.54	-1.50	-1.61	-1.29	11.00
30.....	4.42	.....	17.52	5.90	2.09	-.08	1.80	.46	-1.55	-1.63	-1.24	9.38
31.....	3.80	.....	14.98	.....	2.00	....	1.62	.31	.....	-1.63	.....	8.00

Daily gage height of Black Warrior River at Tuscaloosa, Ala., for 1898.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	7.10	21.68	3.67	25.50	11.34	0.23	0.66	2.45	1.20	-0.60	0.90	5.40
2.....	6.28	18.30	3.78	22.40	9.82	.08	.43	1.95	.82	-.70	.70	5.50
3.....	5.52	14.90	4.03	18.50	8.67	.23	.30	2.45	.70	-.80	.60	5.40
4.....	4.96	12.12	4.05	15.31	7.68	.27	.53	2.80	.30	-.90	.40	5.00
5.....	4.41	10.15	3.98	20.82	6.88	.27	.16	2.96	.00	-1.00	.00	4.70
6.....	4.17	9.42	3.90	38.70	6.20	.15	.10	3.90	-.10	-.90	.30	4.50
7.....	4.13	8.90	3.57	38.55	5.59	.02	-.18	3.40	.30	-.90	.50	5.00
8.....	4.18	8.43	3.33	32.83	5.00	-.10	-.04	3.10	-.20	-.70	.40	5.00
9.....	4.17	7.84	3.12	27.70	4.50	-.29	-.04	3.98	.00	-.30	.40	4.70
10.....	3.97	7.30	3.00	23.04	4.20	-.41	+.10	6.20	.20	-2.00	.50	4.20
11.....	4.00	6.68	2.90	19.50	3.91	-.54	-.08	12.20	.40	3.30	.50	3.70
12.....	4.18	6.30	2.83	17.03	3.50	-.62	-.07	14.10	.20	2.60	.40	3.30
13.....	6.70	6.20	2.80	15.01	3.21	-.71	-.10	10.60	.00	2.00	.50	3.00
14.....	9.70	6.08	3.00	12.93	2.88	-.62	-.07	7.30	-.30	1.40	.80	2.80
15.....	11.97	5.86	4.80	11.65	2.58	-.53	-.11	5.00	-.30	1.00	1.10	2.60
16.....	11.71	5.40	8.00	10.78	2.30	-.38	-.07	3.50	-.40	.80	1.30	2.50
17.....	15.00	5.00	15.40	9.60	2.08	-.48	-.14	2.62	-.60	.40	1.50	2.40
18.....	15.53	4.90	14.10	8.63	1.97	-.56	.00	1.91	.70	.80	1.60	2.10
19.....	14.32	4.83	11.92	8.15	1.64	-.30	1.24	1.50	.70	.80	1.90	4.40
20.....	24.50	4.84	10.08	27.80	1.43	-.21	1.30	1.46	.80	1.20	2.20	18.80
21.....	33.54	4.70	8.82	33.11	1.23	.00	1.12	1.12	.90	3.10	2.50	23.90
22.....	31.42	4.48	7.80	28.45	1.07	.07	.88	1.26	.50	3.80	4.00	21.30
23.....	28.50	4.30	6.96	23.77	1.00	.18	.47	1.20	.60	4.10	8.60	17.40
24.....	30.38	4.00	6.30	22.72	.93	.30	1.08	.90	.70	4.80	11.70	13.30
25.....	30.12	3.83	6.00	24.04	.78	.17	1.95	.50	.80	4.20	11.60	10.50
26.....	42.50	3.64	5.90	22.62	.57	.06	2.50	1.10	.90	3.90	9.50	8.60
27.....	43.48	3.00	5.53	19.67	.43	1.30	2.00	1.02	.90	2.90	7.40	7.30
28.....	39.41	3.72	5.12	17.12	.43	1.10	1.80	.98	.80	2.30	5.90	6.20
29.....	33.80	.....	5.23	15.05	.52	.46	2.03	1.30	.80	2.00	5.50	5.60
30.....	28.50	.....	13.40	13.03	.44	.68	2.55	1.52	-.60	1.40	5.30	5.00
31.....	24.90	.....	25.68	.....	.30	.....	2.86	1.56	.....	1.10	.....	4.70

The following measurements were made by B. M. Hall, and Prof. George S. Wilkins, of the Alabama University, in 1899:

Measurements of Black Warrior River at Tuscaloosa, Ala.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
February 21.....	19.36	12,855	March 4.....	23.70	12,609
February 21.....	19.25	12,640	March 14.....	31.18	36,653
February 24.....	22.85	16,216	March 14.....	34.37	40,331
February 28.....	39.47	48,010	March 17.....	59.50	119,533
March 1.....	35.50	24,988	March 18.....	56.40	86,410
March 2.....	30.35	18,052	March 23.....	40.30	23,911

Daily gage height of Black Warrior River at Tuscaloosa, Ala., for 1899.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	4.40	26.10	37.70	30.30	7.90	2.00	0.10	6.50	1.20	-1.50	-1.03	4.83
2.....	4.50	29.50	32.00	29.20	7.00	1.50	.80	4.90	.70	-1.61	-1.02	3.50
3.....	4.60	27.00	27.70	24.80	6.30	1.20	.30	3.40	.62	-1.80	-1.03	2.77
4.....	4.70	29.00	24.10	22.00	5.80	1.00	-.70	2.70	.23	-1.79	-.99	2.03
5.....	4.70	45.50	21.00	23.20	5.30	1.00	-.10	2.00	-.02	-1.51	-1.00	1.50
6.....	11.20	50.60	20.80	22.60	4.80	.90	-.30	1.90	-.17	-1.48	-1.02	1.22
7.....	42.50	51.40	19.50	23.30	4.40	1.00	-.20	1.80	.38	-1.46	-1.03	.98
8.....	49.30	51.70	16.90	33.90	4.40	.80	-.30	1.30	.40	-1.34	-1.03	.88
9.....	46.60	48.60	14.40	34.00	7.60	.40	-.40	1.20	.46	-1.30	-1.03	.58
10.....	40.40	43.10	12.90	30.80	6.50	.40	-.40	1.10	.68	-.96	-1.01	.60
11.....	33.70	37.80	11.90	27.00	5.10	.50	-.40	2.00	.73	-.78	-1.01	2.20
12.....	31.90	32.80	11.30	23.60	4.30	.50	-.50	1.70	.79	-.72	-.98	23.50
13.....	28.00	28.80	10.00	20.10	4.20	.50	-.60	1.30	.71	-.70	-.96	39.53
14.....	25.00	25.70	28.80	17.20	4.30	.60	-.60	.90	.73	-.88	-.98	35.71
15.....	22.20	22.90	44.50	14.90	4.70	.50	-.70	.60	.78	-.94	-.99	26.50
16.....	20.00	21.60	59.30	13.00	4.30	.70	-.70	.40	.83	-1.03	-1.00	20.63
17.....	19.60	19.90	60.30	11.60	3.70	.60	.70	.30	.86	-1.07	-.97	15.71
18.....	20.10	20.10	57.70	10.50	3.30	.40	.70	.30	.88	-1.12	-.97	10.83
19.....	18.60	20.80	52.40	9.80	2.80	.30	.70	.60	.90	-1.16	-.95	8.02
20.....	16.10	20.60	49.30	9.60	2.70	.20	.70	.60	.92	-1.12	-.95	8.09
21.....	14.00	19.60	46.80	9.50	3.70	.10	.60	.70	.94	-1.10	-.92	9.63
22.....	12.20	18.50	41.60	8.70	3.80	.40	.50	1.50	.99	-.84	-.89	10.80
23.....	11.00	22.70	36.80	8.60	3.30	-.10	-.20	2.60	-1.03	-.73	-.33	10.63
24.....	11.00	23.10	33.00	11.30	3.10	-.10	+.60	2.50	-1.05	-.71	+.17	22.01
25.....	20.30	20.90	29.50	13.60	2.70	-.60	4.90	2.60	-1.04	-.88	-.88	29.04
26.....	29.30	18.50	26.50	13.20	2.30	+.20	7.60	2.30	-1.05	-.94	2.60	25.91
27.....	26.20	23.50	24.20	12.60	2.00	.20	7.40	2.10	-1.04	-1.02	4.50	20.98
28.....	22.50	39.00	22.30	11.40	1.75	.20	7.90	1.90	-1.18	-.60	10.43	17.09
29.....	18.60	.....	21.10	10.00	1.50	.20	9.50	1.60	-1.28	-.73	9.40	15.60
30.....	15.70	.....	19.30	8.90	1.60	.10	9.30	1.50	-1.38	-.96	6.67	14.62
31.....	14.80	.....	18.10	.....	2.50	...	8.50	1.10	.....	-1.03	.....	12.51

Daily gage height of Black Warrior River at Tuscaloosa, Ala., for 1900.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	10.90	6.92	18.14	21.55	21.23	4.24	41.00	9.85	5.50	0.75	4.20	12.50
2.....	9.48	6.40	25.44	18.60	18.95	5.30	33.88	8.00	5.00	.80	5.10	9.65
3.....	8.32	5.00	26.00	15.80	16.33	13.95	32.27	6.50	4.07	.60	5.40	8.50
4.....	7.10	5.71	23.30	13.60	13.82	15.16	32.13	5.15	4.30	.25	5.55	7.90
5.....	6.18	6.40	20.29	12.27	11.60	20.98	30.96	4.40	3.58	.40	5.05	8.20
6.....	5.53	9.58	17.43	12.17	9.60	21.50	27.31	3.80	2.80	.40	4.45	10.20
7.....	5.12	11.50	15.34	11.44	8.20	20.92	23.70	3.35	2.30	.80	3.50	10.65
8.....	4.84	10.53	27.58	10.29	7.28	21.75	20.80	3.00	1.90	1.80	3.50	9.65
9.....	4.60	12.23	39.00	9.97	6.80	38.59	18.45	2.50	1.50	3.90	3.10	8.5
10.....	4.50	20.60	35.03	10.58	6.50	31.70	15.96	2.30	1.40	6.65	2.90	8.15
11.....	7.12	23.00	31.63	26.35	6.12	24.73	12.96	2.10	1.10	6.10	2.70	7.60
12.....	31.63	20.64	27.34	52.79	5.90	19.60	11.05	2.00	.90	14.30	2.50	6.90
13.....	31.80	41.37	23.78	53.40	5.48	15.95	10.60	1.75	.80	22.50	2.40	6.45
14.....	28.18	47.96	20.43	48.69	4.98	15.60	12.90	1.50	1.40	21.85	2.25	6.40
15.....	24.09	45.73	17.40	42.30	4.50	19.23	10.35	1.40	5.45	16.40	2.20	6.65
16.....	20.12	40.23	16.63	37.10	3.85	29.15	8.50	1.50	10.65	11.60	2.10	6.45
17.....	16.50	34.74	21.18	63.00	3.65	28.80	7.00	1.48	8.95	8.20	2.05	6.10
18.....	14.28	29.75	20.28	64.05	3.50	25.33	6.00	1.40	6.24	6.13	2.00	5.75
19.....	15.80	25.88	18.80	62.17	3.52	24.51	5.60	3.00	4.44	5.10	1.95	5.30
20.....	25.00	22.43	45.10	59.35	3.39	30.10	6.35	4.40	3.35	4.30	3.90	5.45
21.....	32.60	19.90	51.00	56.10	3.65	27.80	8.50	3.75	2.60	3.60	4.40	6.30
22.....	29.44	23.58	47.98	51.71	3.50	25.38	8.00	3.00	2.20	3.15	10.25	8.35
23.....	24.54	26.50	42.40	46.20	3.35	24.55	8.10	2.50	1.87	4.60	12.50	11.90
24.....	20.43	24.20	38.24	41.88	4.40	50.00	8.70	2.55	1.65	7.30	11.00	17.00
25.....	17.12	22.38	35.41	37.94	7.55	58.35	7.40	2.10	1.60	10.40	9.45	18.70
26.....	14.12	21.00	36.78	33.94	7.68	56.35	6.80	4.48	1.45	8.55	15.90	17.00
27.....	12.14	18.63	35.33	30.89	6.70	52.90	9.20	4.30	1.30	6.75	22.20	14.00
28.....	10.47	16.52	31.80	28.15	5.30	49.05	16.20	3.25	1.05	5.40	21.00	12.50
29.....	9.10	.....	28.85	25.73	4.25	48.75	13.50	2.40	.90	4.70	17.35	10.95
30.....	8.27	.....	26.25	23.50	3.60	44.75	11.83	2.10	.75	4.10	14.00	10.15
31.....	7.60	.....	24.20	.....	3.62	.....	11.05	2.50	.....	3.70	.....	14.20

During 1901 the following discharge measurements were made on Black Warrior River at Tuscaloosa, Ala.:

1901.

Feb. 1—Hydrographer, K. T. Thomas; gage height, 15.10; discharge, 9,300 second-feet.

March 15—Hydrographer, K. T. Thomas; gage height, 18.72; discharge, 9,461 second-feet.

June 27—Hydrographer, K. T. Thomas; gage height, 1.77; discharge, 828 second-feet.

Daily gage height of Black Warrior River at Tuscaloosa, Ala., for 1901.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	19.50	15.10	7.50	28.00	9.40	6.50	1.70	0.70	6.11	5.40	0.85	1.60
2.....	19.00	14.80	7.30	26.50	8.50	12.25	1.73	0.60	5.10	6.91	0.80	1.50
3.....	17.90	15.00	8.40	32.60	7.90	16.65	2.00	0.85	4.05	9.00	0.75	1.40
4.....	14.70	35.20	9.65	35.10	7.30	14.80	2.50	1.00	3.60	6.72	1.00	1.40
5.....	13.00	42.00	9.70	31.50	7.00	12.00	2.50	0.80	3.05	5.30	1.10	1.31
6.....	11.50	38.35	9.50	27.50	6.35	11.20	2.30	0.75	2.81	4.50	1.10	1.95
7.....	10.25	32.15	9.00	24.30	6.15	11.10	2.50	0.60	2.35	3.45	1.05	1.90
8.....	9.50	29.15	8.50	20.90	6.00	11.50	2.40	0.50	2.04	3.02	1.00	2.58
9.....	8.75	28.05	8.05	17.90	5.70	9.40	2.25	0.35	1.90	2.50	0.95	2.60
10.....	8.30	30.97	8.70	14.50	5.60	7.60	2.10	0.25	1.70	2.31	0.90	3.80
11.....	17.40	29.75	29.50	12.50	5.00	6.50	2.00	0.20	1.50	2.10	0.90	5.00
12.....	52.70	27.45	34.00	11.00	4.60	6.20	1.70	0.65	1.41	1.95	0.85	5.80
13.....	56.50	25.15	28.50	10.00	5.00	6.40	1.30	0.65	1.30	3.41	1.00	5.70
14.....	53.25	22.50	23.50	11.35	6.60	5.50	0.90	0.80	2.52	3.30	1.05	7.40
15.....	47.25	19.60	19.70	12.80	8.70	5.05	0.70	1.20	6.70	3.97	1.00	21.00
16.....	41.45	17.45	16.00	13.00	8.30	4.80	0.60	5.70	8.00	3.80	0.98	40.75
17.....	36.30	15.70	13.00	11.70	6.80	4.50	0.43	17.00	6.10	3.51	0.90	35.00
18.....	31.85	13.70	11.05	12.80	5.50	4.10	2.60	26.30	12.21	3.00	0.93	27.00
19.....	28.15	12.50	10.00	25.70	4.70	3.80	4.00	22.70	16.00	2.70	1.10	21.50
20.....	25.15	11.90	9.60	39.80	4.90	3.25	5.70	25.70	14.50	2.30	1.30	16.41
21.....	22.50	10.90	13.00	42.60	8.30	3.00	7.33	32.10	10.60	2.00	1.40	12.10
22.....	19.85	9.95	16.50	38.00	17.30	2.75	6.00	32.50	7.50	1.81	1.70	9.95
23.....	17.55	9.20	15.70	32.80	19.80	2.30	4.50	31.97	5.70	1.61	2.40	7.00
24.....	15.35	8.75	14.00	28.41	17.50	2.20	3.20	26.80	4.51	1.45	2.65	6.80
25.....	14.60	8.65	13.80	24.40	14.10	2.00	2.50	22.40	3.90	1.31	2.00	7.30
26.....	18.00	8.50	28.50	21.00	11.30	1.97	2.00	18.30	3.40	1.20	1.95	8.34
27.....	17.20	8.20	37.25	17.90	9.30	1.85	1.50	14.10	2.91	1.05	1.95	9.00
28.....	15.50	7.90	34.50	14.90	8.15	1.70	1.05	9.85	2.60	0.81	2.00	10.96
29.....	14.80	.....	29.00	12.50	7.00	1.65	0.90	7.90	2.91	0.55	1.95	16.30
30.....	15.10	.....	24.30	10.90	6.90	1.65	0.80	7.41	4.80	0.90	1.91	40.00
31.....	14.60	.....	24.85	.....	6.35	.....	0.60	7.10	.....	0.90	.....	40.00

Rating table for Black Warrior River at Tuscaloosa, Ala.

[This table is applicable from Jan. 1, 1895, to Dec. 31, 1901.]

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.
—1.0	90	6.0	3,110	13.0	6,995	20.0	10,880
—0.9	105	6.1	3,160	13.1	7,045	20.1	10,950
—0.8	120	6.2	3,210	13.2	7,095	20.2	11,020
—0.7	140	6.3	3,260	13.3	7,145	20.3	11,090
—0.6	160	6.4	3,310	13.4	7,195	20.4	11,160
—0.5	180	6.5	3,370	13.5	7,255	20.5	11,230
—0.4	200	6.6	3,430	13.6	7,315	20.6	11,305
—0.3	220	6.7	3,490	13.7	7,375	20.7	11,380
—0.2	240	6.8	3,550	13.8	7,435	20.8	11,455
—0.1	260	6.9	3,610	13.9	7,495	20.9	11,530
0.0	280	7.0	3,665	14.0	7,550	21.0	11,600
0.1	310	7.1	3,715	14.1	7,600	21.1	11,690
0.2	340	7.2	3,765	14.2	7,650	21.2	11,780
0.3	370	7.3	3,815	14.3	7,700	21.3	11,870
0.4	400	7.4	3,865	14.4	7,750	21.4	11,960
0.5	430	7.5	3,925	14.5	7,810	21.5	12,050
0.6	460	7.6	3,985	14.6	7,870	21.6	12,140
0.7	490	7.7	4,045	14.7	7,930	21.7	12,230
0.8	530	7.8	4,105	14.8	7,990	21.8	12,320
0.9	565	7.9	4,165	14.9	8,050	21.9	12,410
1.0	600	8.0	4,220	15.0	8,105	22.0	12,500
1.1	635	8.1	4,270	15.1	8,155	22.1	12,600
1.2	670	8.2	4,320	15.2	8,205	22.2	12,700
1.3	710	8.3	4,370	15.3	8,255	22.3	12,800
1.4	750	8.4	4,420	15.4	8,305	22.4	12,900
1.5	790	8.5	4,480	15.5	8,365	22.5	13,000
1.6	830	8.6	4,540	15.6	8,425	22.6	13,100
1.7	870	8.7	4,600	15.7	8,485	22.7	13,200
1.8	910	8.8	4,660	15.8	8,545	22.8	13,300
1.9	955	8.9	4,720	15.9	8,605	22.9	13,400
2.0	1,000	9.0	4,775	16.0	8,660	23.0	13,500
2.1	1,045	9.1	4,825	16.1	8,710	23.1	13,620
2.2	1,090	9.2	4,875	16.2	8,760	23.2	13,740
2.3	1,135	9.3	4,925	16.3	8,810	23.3	13,860
2.4	1,180	9.4	4,975	16.4	8,860	23.4	13,980
2.5	1,225	9.5	5,035	16.5	8,920	23.5	14,100
2.6	1,270	9.6	5,095	16.6	8,980	23.6	14,220
2.7	1,320	9.7	5,155	16.7	9,040	23.7	14,340
2.8	1,370	9.8	5,215	16.8	9,100	23.8	14,460
2.9	1,420	9.9	5,275	16.9	9,160	23.9	14,580
3.0	1,470	10.0	5,330	17.0	9,215	24.0	14,700
3.1	1,520	10.1	5,380	17.1	9,265	24.1	14,830
3.2	1,570	10.2	5,430	17.2	9,315	24.2	14,960
3.3	1,620	10.3	5,480	17.3	9,365	24.3	15,090
3.4	1,670	10.4	5,530	17.4	9,415	24.4	15,200

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.
3.5	1,725	10.5	5,590	17.5	9,475	24.5	15,350
3.6	1,780	10.6	5,650	17.6	9,535	24.6	15,480
3.7	1,835	10.7	5,710	17.7	9,595	24.7	15,610
3.8	1,890	10.8	5,770	17.8	9,655	24.8	15,740
3.9	1,945	10.9	5,830	17.9	9,715	24.9	15,870
4.0	2,000	11.0	5,885	18.0	9,770	25.0	16,000
4.1	2,055	11.1	5,935	18.1	9,820	26.0	17,600
4.2	2,111	11.2	5,985	18.2	9,870	28.0	21,500
4.3	2,166	11.3	6,035	18.3	9,920	30.0	26,500
4.4	2,222	11.4	6,085	18.4	9,970	32.0	31,700
4.5	2,277	11.5	6,145	18.5	10,030	34.0	38,000
4.6	2,333	11.6	6,205	18.6	10,090	36.0	45,000
4.7	2,388	11.7	6,265	18.7	10,150	38.0	53,000
4.8	2,444	11.8	6,325	18.8	10,210	40.0	61,000
4.9	2,500	11.9	6,385	18.9	10,270	42.0	69,000
5.0	2,555	12.0	6,440	19.0	10,325	44.0	77,000
5.1	2,610	12.1	6,490	19.1	10,375	46.0	85,000
5.2	2,666	12.2	6,540	19.2	10,425	48.0	93,000
5.3	2,721	12.3	6,590	19.3	10,475	50.0	101,000
5.4	2,777	12.4	6,640	19.4	10,525	52.0	109,000
5.5	2,832	12.5	6,700	19.5	10,585	54.0	117,000
5.6	2,888	12.6	6,760	19.6	10,645	55.0	121,000
5.7	2,943	12.7	6,820	19.7	10,705		
5.8	3,000	12.8	6,880	19.8	10,765		
5.9	3,054	12.9	6,940	19.9	10,825		

NOTE.—This table applied to the foregoing "Daily gage heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.

Estimated monthly discharge of Black Warrior River at Tuscaloosa, Alabama.

[Drainage area, 4,900 square miles.]

Month.	Discharge in second-feet.			Total in acre-feet.	Run-off.	
	Maxi-mum.	Mini-mum.	Mean		Depth in inches.	Second-ft. per sq. mile.
1895.						
January	103,400	2,777	25,464	1,565,720	6.00	5.20
February	14,830	4,775	7,603	422,249	1.61	1.55
March	109,000	4,540	39,977	2,458,106	9.42	8.16
April	14,700	3,665	6,895	410,280	1.57	1.41
May	13,860	2,000	5,511	338,860	1.29	1.12
June	3,665	1,000	2,133	126,922	0.49	0.44
July	9,970	1,000	3,581	220,189	0.84	0.73
August	2,500	565	1,098	67,514	0.25	0.22
September	1,835	310	883	52,542	0.20	0.18
October	310	140	233	14,327	0.06	0.05
November	750	280	488	29,038	0.11	0.10
December	11,600	530	2,021	124,267	0.47	0.41
1896.						
January	24,610	2,444	5,981	367,757	1.41	1.22
February	47,000	3,665	19,161	1,102,153	4.22	3.91
March	52,600	3,160	12,996	799,093	3.06	2.65
April	14,100	2,721	6,072	361,309	1.38	1.24
May	49,800	1,370	7,420	456,238	1.74	1.51
June	9,970	1,090	2,910	173,157	0.65	0.59
July	4,420	460	1,232	75,753	0.29	0.25
August	750	310	478	29,391	0.12	0.10
September	400	120	201	11,960	0.04	0.04
October	260	120	157	9,654	0.03	0.03
November	600	120	307	18,268	0.07	0.06
December	4,045	430	955	58,721	0.22	0.19
1897.						
January	10,500	385	3,493	214,775	0.82	0.71
February	17,440	1,945	8,409	467,010	1.79	1.72
March	120,080	4,540	52,883	3,251,650	12.44	10.79
April	25,285	2,610	9,657	574,630	2.20	1.97
May	11,195	1,000	3,600	221,355	0.84	0.73
June	1,697	260	715	42,545	0.17	0.15
July	7,810	240	1,809	111,230	0.43	0.37
August	1,595	355	701	43,100	0.16	0.14
September	600	102	295	17,555	0.07	0.06
October	102	90	93	5,718	0.02	0.02
November	125	107	115	6,843	0.03	0.02
December	29,000	115	5,549	341,195	1.30	1.13
1898.						
January	75,000	1,972	16,577	1,019,287	3.90	3.38
February	12,230	1,752	3,902	216,706	0.83	0.80

Estimated monthly discharge of Black Warrior River at Tuscaloosa, Alabama.

[Drainage area, 4,900 square miles.]

Month.	Discharge in second-feet.			Total in acre-ft.	Run-off.	
	Maxi-mum.	Mini-mum.	Mean.		Depth in inches.	Second-ft. per sq. mile.
March	17,120	1,370	3,626	222,955	0.85	0.74
April	55,800	4,295	15,620	923,452	3.56	3.19
May	6,060	370	1,766	108,589	0.41	0.36
June	710	160	303	18,030	0.07	0.06
July	1,395	250	549	33,757	0.13	0.11
August	7,600	430	1,785	109,756	0.41	0.36
September	670	140	252	14,995	0.06	0.05
October	2,444	130	880	54,109	0.21	0.18
November	6,265	280	1,626	96,754	0.37	0.33
December	14,580	1,045	3,763	231,379	0.89	0.77
1899.						
January	81,375	2,222	18,118	1,114,033	4.27	3.70
February	90,375	10,030	30,923	1,717,376	6.57	6.31
March	122,625	5,330	35,308	2,171,004	8.31	7.21
April	32,800	4,540	11,901	708,158	2.71	2.43
May	4,165	790	2,092	128,632	0.49	0.43
June	1,000	175	448	26,658	0.10	0.09
July	5,035	160	1,111	68,313	0.26	0.23
August	3,370	370	963	59,213	0.23	0.20
September	670	110	200	11,901	0.04	0.04
October	175	92	130	7,993	0.03	0.03
November	5,590	127	721	42,902	0.17	0.15
December	47,650	460	8,880	546,010	2.09	1.81
1900.						
January	29,760	2,277	9,857	606,083	2.01	2.32
February	76,312	2,555	18,356	1,019,440	3.75	3.90
March	87,750	8,280	27,105	1,666,623	5.53	6.37
April	136,687	5,302	48,426	2,881,547	9.88	11.02
May	11,825	1,645	3,702	227,627	0.76	0.88
June	115,312	2,138	32,614	1,940,668	6.66	7.43
July	52,000	2,888	10,952	673,412	2.24	2.59
August	5,245	750	1,674	102,930	0.34	0.39
September	5,680	512	1,580	94,017	0.32	0.36
October	13,000	355	3,382	207,951	0.69	0.80
November	12,700	977	3,701	220,225	0.76	0.85
December	10,150	2,721	5,119	314,755	1.05	1.21
The year	136,687	355	13,872	9,955,278	2.83	38.12

Estimated monthly discharge of Black Warrior River at Tuscaloosa, Alabama.

[Drainage area, 4,900 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maximum.	Minimum.	Mean.	Second-feet per square mile.	Depth in inches.
1901.					
January	108,375	4,370	22,938	4.68	5.39
February	55,100	4,165	15,094	3.08	3.21
March	40,900	3,815	11,947	2.44	2.81
April	57,020	5,330	17,370	3.55	3.96
May	10,765	2,333	4,355	.89	1.03
June	9,010	850	3,217	.66	.74
July	3,815	415	1,210	.25	.29
August	29,550	340	7,117	1.45	1.67
September	8,660	710	2,626	.54	.60
October	4,775	445	1,536	.31	.36
November	1,022	512	712	.15	.17
December	80,250	710	13,293	2.71	3.12
The year	108,375	340	8,454	1.73	23.35

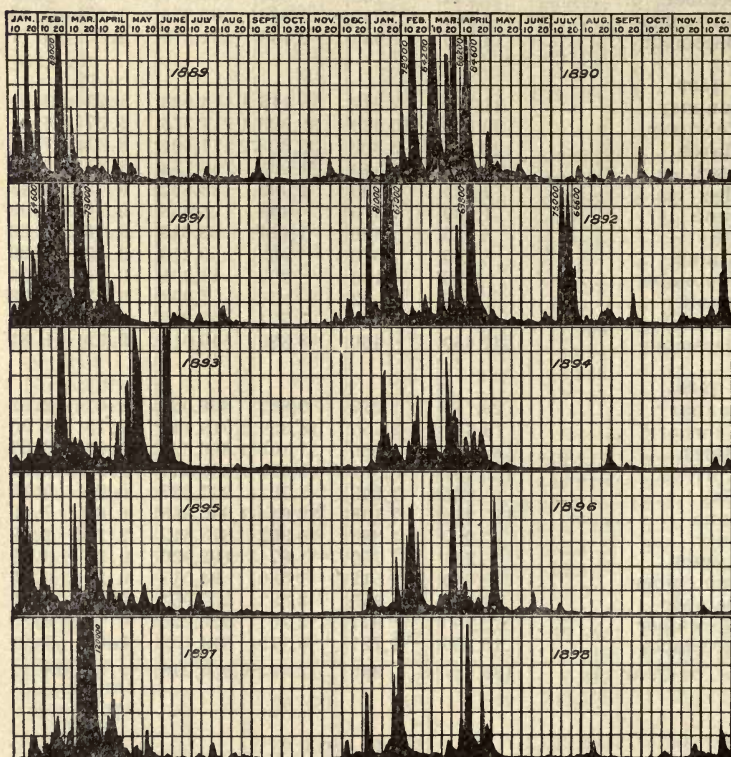


FIG. 14.—Discharge of Black Warrior River at Tuscaloosa, Alabama, 1889-1898.

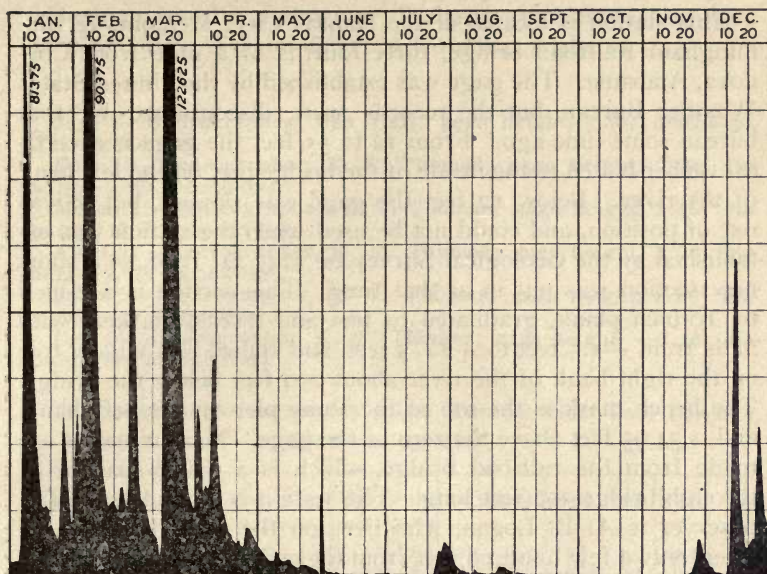


Fig., 15.—Discharge of Black Warrior River at Tuscaloosa, Alabama, 1899.

Minimum monthly discharge of Black Warrior River at Tuscaloosa, Ala., with corresponding net horse power per foot of fall on a water wheel realizing 80 per cent. of the theoretical power.

[Drainage area, 4,900 square miles.]

	1899				1900				1901			
	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.		Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.		Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.	
January	2,222	202	1		2,277	207	1		4,370	398	1	
February	10,030	912	2		2,555	232	1		4,165	378	1	
March	5,330	485	1		8,282	753	1		3,815	347	1	
April	4,539	413	1		5,302	483	1		5,330	485	1	
May	790	72	1		1,645	150	1		2,333	212	1	
June	175	16	1		2,133	194	1		850	77	2	
July	160	15	7		2,883	262	1		415	38	1	
August	370	34	2		750	68	2		340	31	1	
September ...	110	10	1		512	47	1		710	65	1	
October	92	9	1		355	32	1		445	40	1	
November	127	12	5		977	89	1		512	47	1	
December	460	42	1		2,721	247	1		710	65	1	

2. BLACK WARRIOR RIVER NEAR CORDOVA, ALABAMA.

This station is located at the Kansas City, Memphis & Birmingham Railroad bridge, three-fourths of a mile from Cordova, Alabama. The gage was established by the United States Weather Bureau, but the records were discontinued by that bureau some time ago. From 12 to 55 feet the gage is a vertical timber bolted to the inside of the bridge pier on the left bank of the river. Below 12 feet the gage was sloping, but it was out of position, and could not be used when the station was established by the Geological Survey on May 21, 1900, so a short new section was put in at that time. This section is a 2-inch by 10-inch plank, graduated to feet and tenths, marked with nails from -1.5 feet to +12.5 feet, and spiked to a willow tree on the right bank of the river about 200 feet below the bridge. The bench mark is the top of the stone pier on the left bank, and is 54.95 feet above the zero of the gage. Measurements are made from the railroad bridge, which is a single-span, iron, through bridge 300 feet long. The section is a good one. The observer is A. B. Logan, who lives on the right bank of the river, only a few hundred feet from the end of the bridge. During 1900 measurement was made by Max Hall as follows:

Daily gage height, in feet, of Black Warrior River near Cordova, Alabama, for 1900.

Day	May.	June	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....		0.6	8.1	0.9	0.5	-0.8	-0.1	1.4
2.....		2.8	5.2	.5	.2	-.8	+.5	1.0
3.....		5.3	7.1	.4	.1	-.9	.8	.8
4.....		7.1	6.5	.2	.0	-.9	.4	1.0
5.....		7.5	5.3	.1	-.1	-1.0	.3	1.9
6.....		7.6	4.6	.0	-.2	-1.0	.3	1.8
7.....		6.5	3.5	.1	-.3	-1.1	.2	1.4
8.....		7.3	2.1	.2	-.4	+.2	.2	1.2
9.....		6.5	2.5	.3	-.5	.9	.1	1.0
10.....		4.5	2.7	.3	-.5	.9	.0	.8
11.....		3.2	1.0	.4	-.6	.1	-.1	.7
12.....		3.0	.8	.5	-.6	9.4	-.2	.7
13.....		4.6	1.0	.5	-.7	9.2	-.2	.8
14.....		8.6	.8	.5	-.6	3.2	-.3	.8
15.....		9.8	.5	.6	1.5	2.3	-.3	.8
16.....		8.0	.4	.6	.9	1.7	-.3	.6
17.....		8.2	.4	.6	.5	1.0	-.4	.5
18.....		7.2	.3	.6	.1	.6	+.3	.4
19.....		12.4	.3	.1	.0	.3	.2	.4
20.....		10.0	.2	.0	-.1	.2	.1	.5
21.....	0.1	6.1	.7	.2	-.2	.1	.3	1.5
22.....	.1	6.5	1.0	.3	-.3	.0	1.1	3.0
23.....	.1	15.2	.8	.4	-.3	1.0	.8	2.9
24.....	1.5	32.9	.5	.8	-.4	.7	.8	5.0
25.....	1.5	33.8	.9	1.7	-.4	.5	.9	4.0
26.....	1.0	31.3	.5	.8	-.5	.3	5.1	3.1
27.....	.6	22.1	1.6	.2	-.5	.2	4.9	2.5
28.....	.7	28.9	2.4	.0	-.6	.1	3.6	2.1
29.....	.8	22.4	1.3	.1	-.7	.0	2.8	1.8
30.....	.9	16.5	1.2	.9	-.7	-.1	1.9	1.7
31.....	.9	....	1.5	1.0	....	-.1	....	2.8

During 1901 the following discharge measurements were made on Black Warrior River at Cordova, Alabama: 1901.

Jan. 8—Hydrographer, Max Hall; gage height, 1.30; discharge, 1,781 second-feet.

Feb. 18—Hydrographer, K. T. Thomas; gage height, 2.40; discharge, 2,863 second-feet.

March 12—Hydrographer, K. T. Thomas; gage height, 9.45; discharge, 13,279 second-feet.

April 17—Hydrographer, K. T. Thomas; gage height, 1.70; discharge, 2,024 second-feet.

June 20—Hydrographer, K. T. Thomas; gage height, 0.00; discharge, 644 second-feet.

Oct. 26—Hydrographer, K. T. Thomas; gage height, -0.40; discharge, 385 second-feet.

Daily gage height, in feet, of Black Warrior River near Cordova, Alabama, for 1901.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	3.7	4.00	1.00	5.40	1.7	1.6	+0.1	-0.6	0.7	1.2	-0.4	0.2
2.....	3.1	3.60	1.60	9.20	1.5	4.5	0.3	-0.6	0.5	0.8	-0.5	0.2
3.....	2.8	4.50	2.30	14.50	1.3	2.8	0.1	-0.65	0.4	0.5	-0.5	0.1
4.....	2.5	17.60	1.90	10.90	1.1	2.1	0.0	-0.65	0.2	0.4	-0.4	0.0
5.....	2.3	18.00	1.60	7.00	1.0	2.0	-0.2	-0.70	0.1	0.3	-0.4	0.1
6.....	2.0	9.10	1.80	5.80	0.8	2.6	-0.2	-0.70	0.0	0.2	-0.4	0.1
7.....	1.7	5.60	1.50	4.90	0.7	2.7	-0.3	-0.70	-0.1	0.1	-0.3	0.1
8.....	1.5	5.20	1.30	4.20	0.6	2.4	-0.3	-0.65	-0.2	0.0	-0.3	0.1
9.....	1.3	7.10	1.50	3.50	0.5	1.5	-0.4	-0.60	-0.3	-0.1	-0.4	0.1
10.....	2.6	8.10	17.50	2.80	0.4	1.1	-0.5	-0.60	-0.4	-0.2	-0.4	0.7
11.....	19.9	6.20	20.50	2.30	0.3	2.2	-0.6	-0.60	-0.5	-0.2	-0.4	1.2
12.....	32.5	5.40	10.80	2.10	0.4	1.5	-0.6	-0.30	-0.3	-0.2	-0.3	1.0
13.....	29.85	4.80	6.20	1.80	0.6	1.1	-0.6	+ .40	-0.3	0.0	-0.3	0.8
14.....	17.85	4.20	5.30	2.50	3.1	1.0	-0.7	.10	+0.5	+1.1	-0.3	6.2
15.....	9.25	3.80	4.20	2.80	1.8	0.9	-0.7	.20	0.7	0.6	-0.3	2.4
16.....	6.80	3.30	3.50	2.30	1.3	0.7	-0.7	5.00	0.5	0.3	-0.4	1.52
17.....	5.50	2.90	2.80	1.80	0.9	0.6	-0.6	12.10	3.8	0.1	-0.4	8.1
18.....	4.30	2.60	2.20	2.20	0.7	0.5	0.0	6.80	5.0	0.0	-0.4	5.3
19.....	3.80	2.20	1.90	9.40	0.9	0.3	+1.1	10.80	3.5	-0.1	-0.2	3.5
20.....	3.10	2.00	2.40	16.10	1.8	0.2	2.8	8.70	1.8	-0.2	0.0	2.6
21.....	2.80	1.80	5.00	11.50	5.8	0.0	1.6	8.50	1.1	-0.2	-0.1	2.0
22.....	2.60	1.60	4.20	6.80	7.3	-0.1	0.5	11.20	0.8	-0.3	-0.1	1.5
23.....	2.40	1.30	3.50	5.40	5.5	-0.2	0.0	7.30	0.5	-0.3	0.0	1.5
24.....	2.60	1.40	3.50	4.50	3.6	-0.3	-0.2	5.20	0.4	-0.4	-0.1	2.0
25.....	5.40	1.20	4.95	3.60	2.8	-0.3	-0.3	4.00	0.3	-0.4	-0.2	2.5
26.....	5.00	1.20	11.20	3.00	2.1	-0.3	-0.4	2.80	0.2	-0.4	-0.2	2.1
27.....	3.80	1.10	6.90	2.60	1.6	-0.4	-0.5	2.00	0.1	-0.4	-0.1	2.6
28.....	4.20	1.00	5.30	2.20	1.3	-0.4	-0.5	1.50	0.1	-0.4	-0.1	5.0
29.....	3.80	.....	4.60	2.00	1.1	-0.4	-0.5	1.40	1.0	-0.5	-0.2	18.5
30.....	3.60	.....	4.00	1.90	1.0	-0.5	-0.55	1.20	2.3	-0.5	-0.2	22.0
31.....	4.20	.....	6.20	.....	1.0	.....	-0.6	1.00	.....	-0.5	.....	13.5

Rating table for Black Warrior River at Cordova, Alabama, for 1900 and 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second ft.	Feet.	Sec. ft.	Feet.	Second ft.	Feet.	Second ft.
—0.7	205	3.3	4,144	7.3	10,064	11.3	15,984
—0.6	260	3.4	4,292	7.4	10,212	11.4	16,132
—0.5	320	3.5	4,440	7.5	10,360	11.5	16,280
—0.4	384	3.6	4,588	7.6	10,508	11.6	16,428
—0.3	450	3.7	4,736	7.7	10,656	11.7	16,576
—0.2	518	3.8	4,884	7.8	10,804	11.8	16,724
—0.1	588	3.9	5,032	7.9	10,952	11.9	16,872
0.0	660	4.0	5,180	8.0	11,100	12.0	17,020
0.1	734	4.1	5,328	8.1	11,248	12.1	17,168
0.2	810	4.2	5,476	8.2	11,396	12.2	17,316
0.3	888	4.3	5,624	8.3	11,544	12.3	17,464
0.4	968	4.4	5,772	8.4	11,692	12.4	17,612
0.5	1,050	4.5	5,920	8.5	11,840	12.5	17,760
0.6	1,134	4.6	6,068	8.6	11,988	12.6	17,908
0.7	1,220	4.7	6,216	8.7	12,136	12.7	18,056
0.8	1,307	4.8	6,364	8.8	12,284	12.8	18,204
0.9	1,396	4.9	6,512	8.9	12,432	12.9	18,352
1.0	1,486	5.0	6,660	9.0	12,580	13.0	18,500
1.1	1,577	5.1	6,808	9.1	12,728	13.1	18,648
1.2	1,669	5.2	6,956	9.2	12,876	13.2	18,796
1.3	1,762	5.3	7,104	9.3	13,024	13.3	18,944
1.4	1,856	5.4	7,252	9.4	13,172	13.4	19,092
1.5	1,951	5.5	7,400	9.5	13,320	13.5	19,240
1.6	2,047	5.6	7,548	9.6	13,468	13.6	19,388
1.7	2,144	5.7	7,696	9.7	13,616	13.7	19,536
1.8	2,242	5.8	7,844	9.8	13,764	13.8	19,684
1.9	2,342	5.9	7,992	9.9	13,912	13.9	19,832
2.0	2,444	6.0	8,140	10.0	14,060	14.0	19,980
2.1	2,547	6.1	8,288	10.1	14,208	14.1	20,128
2.2	2,652	6.2	8,436	10.2	14,356	14.2	20,276
2.3	2,758	6.3	8,584	10.3	14,504	14.3	20,424
2.4	2,868	6.4	8,732	10.4	14,652	14.4	20,572
2.5	2,988	6.5	8,880	10.5	14,800	14.5	20,720
2.6	3,118	6.6	9,028	10.6	14,948	14.6	20,868
2.7	3,258	6.7	9,176	10.7	15,096	14.7	21,016
2.8	3,404	6.8	9,324	10.8	15,244	14.8	21,164
2.9	3,552	6.9	9,472	10.9	15,392	14.9	21,312
3.0	3,700	7.0	9,620	11.0	15,540	15.0	21,460
3.1	3,848	7.1	9,768	11.1	15,688		
3.2	3,996	7.2	9,916	11.2	15,836		

NOTE.—This table applied to the foregoing "Daily gage heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.

Estimated monthly discharge of Mulberry Fork of Black Warrior River, near Cordova, Alabama.

[Drainage area, 237 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maxi- mum.	Mini- mum.	Mean.	Second- feet per square mile.	Depth in inches.
1900.					
June	49,284	1,134	16,185	8.52	9.51
July	11,248	810	2,975	1.57	1.81
August	2,144	660	1,016	.53	.61
September	1,951	205	556	.29	.32
October	13,098	60	1,732	.91	1.05
November	6,808	384	1,487	.78	.87
December	6,660	968	2,154	1.13	1.30
1901.					
January	51,800	1,762	8,713	4.59	5.29
February	31,820	1,486	6,616	3.48	3.62
March	29,600	1,486	6,637	3.49	4.02
April	23,088	2,242	6,967	3.67	4.10
May	10,064	968	2,539	1.34	1.54
June	5,920	320	1,582	.83	.93
July	3,404	205	631	.33	.38
August	17,168	205	4,155	2.19	2.53
September	6,660	320	1,415	.74	.83
October	1,669	320	687	.36	.42
November	660	320	468	.25	.28
December	31,820	518	4,923	2.59	2.99
The year	51,800	205	3,778	1.99	26.93

Minimum monthly discharge of Black Warrior River at Cordova, Ala., with corresponding net horse power per foot of fall on a water wheel realizing 80 per cent. of the theoretical power.

[Drainage area, 237 square miles.]

	1900			1901		
	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.
January				1,762	160	1
February				1,486	135	1
March				1,486	135	1
April				2,242	204	2
May	734	67	3	968	88	1
June	1,134	103	1	320	29	1
July	810	74	1	205	19	3
August	660	60	3	205	19	3
September	205	19	3	320	29	1
October	60	55	1	320	29	3
November	384	35	1	320	29	2
December	968	88	2	518	47	2

NOTE.—To find the minimum net horse power available at a shoal on this stream, near this station, for any month, multiply the total fall of the shoal by the "Net H. P. per foot of fall" in this table for that month.

3. SURVEY OF BLACK WARRIOR RIVER, ALABAMA.

The Black Warrior River is formed by the junction of the Mulberry and Sipsey forks of Black Warrior at Old Warrior Town in Walker County, Alabama, and runs in a southwesterly direction past Tuscaloosa to Demopolis, Ala., at which point it enters the Tombigbee River. Above Tuscaloosa it is known as the Black Warrior River, and below Tuscaloosa as the Warrior River.

The accompanying profile is made from the surveys of the Corps of Engineers, U. S. A.

A great deal of work is being done by the Government on this river in order to make it navigable as an outlet to important coal fields above.

In the 92 miles from Old Warrior Town to Tuscaloosa, there is a fall of 158 feet. The distribution of this fall is shown by the following table, giving distances in miles above Tuscaloosa and elevations of water surface above sea level.

Miles above Tuscaloosa.	Elevation above sea level.	
92.4	249.7	Fork of Sipsey and Mulberry.
85.3	248.8	Black Water Creek.
84.6	242.3	Foot of Sanders Shoals.
79.7	242.1	Big Cane Creek.
76.2	240.8	Above Paynes Mill.
76.2	237.1	Below Paynes Mill.
74.4	231.7	Foot of Bee Shoals.
71.2	231.6	Birch Shoals.
71.2	230.6	Birch Shoals.
69.0	230.0	Top of Tuggles Shoals.
68.0	225.6	Foot of Tuggles Shoals.
55.0	216.6	Mouth of Lost Creek.
48.0	215.1	Mouth of Little Warrior River.
47.6	206.1	Foot of Fork Shoals.
43.3	296.1	Above Knight's Mill.
43.3	202.5	Below Knight's Mill.
38.0	202.2	Above Black Rock.
37.7	193.0	Below Black Rock.
30.3	192.3	Top of Squaw Shoals.
25.8	151.3	Foot of Squaw Shoals.
21.7	139.8	Foot of Fair Shoals.
19.3	132.3	Foot of Rose Shoals.
8.7	132.30	Top of Lock 4, at Lower Yellow Creek.
2.0	120.16	Top of Lock 3, Tuscaloosa, Ala.
1.3	109.66	Top of Lock 2, Tuscaloosa, Ala.
0.7	101.16	Top of Lock 1, Tuscaloosa, Ala.
	91.30	Foot of Lock 1, Tuscaloosa, Ala.

There are gage stations, both at Tuscaloosa and Cordova, Ala., where systematic discharge measurements have been made, the results of which are given in the foregoing pages. Comparative measurements at the two stations at same stage, which was same stage as low water in November, 1901, shows a discharge of 825 second-feet at Tuscaloosa, and 285 second-feet at Cordova. At minimum stage of driest years the water gets considerably lower, as is shown by the records referred to, but the figures named are safe for low season in all ordinary years, and will be used in this discussion, for determining the power available at different sites along the river.

The locks and proposed locks on this section of the river begin with No. 1, at Tuscaloosa, and are numbered up the river. Locks 1, 2, 3 and 4 are about completed, and others are projected, but the locations of the latter in the following list are approximated. However, the exact location of each is immaterial in showing the power available. The following is a table showing positions of locks and lock sites in miles above Tuscaloosa, the sea level elevation of water below each, the lift at each and the net horsepower that can be developed at each day on an 80 per cent. turbine during dry season in ordinary years, like 1900, after deducting 100 second-feet for lockage.

No. of lock or site.	Miles from Tuscaloosa.	Sea-level eleva- tion of water below lock.	Lift.	Sec.-ft. after deducting 100 for lockage.	Net H. P. on 80 per cent. turbine without storage.	Location.
1	0.7	91.30	9.83	725	650	Bottom University Shoal, Tuscaloosa.
2	1.3	101.16	8.50	725	560	On University Shoal, Tuscaloosa.
3	2.0	109.66	10.50	725	690	On University Shoal, Tuscaloosa.
4	8.7	120.16	12.14	704	777	Near mouth of Yellow Creek.
5	19.3	132.30	10.00	660	600	Foot of Rose Shoals.
6	21.7	142.30	9.00	660	540	Foot of Fair Shoals.
7	23.8	151.30	14.00	660	840	Foot of Squaw Shoals.
8	26.3	165.30	14.00	660	840	On Squaw Shoals.
9	27.8	179.30	14.00	660	840	On Squaw Shoals.
10	37.7	193.3	14.00	550	700	Below Black Rock.
11	47.6	207.3	14.00	550	700	Mouth of Little Warrior River, or Locust Fork.
12	63.4	221.3	14.00	374	476	
13	75.0	235.3	14.00	285	364	

The best power on the river is at Squaw Shoals, 26 miles above Tuscaloosa, covered on the above table by locks Nos. 7, 8 and 9, each having a lift of 14 feet, and making a total fall on Squaw Shoals of 42 feet. This can be developed to best advantage by constructing a canal from the top of proposed dam at Lock No. 9, along the river bank, two miles in length, to a point opposite the foot of Squaw Shoals, below Lock No. 7. This canal taking the river water not need for lockage, and allowing two feet for grade and storage, will utilize a net head of 40 feet, and produce 2,400 net horse power continuously, or 4,800 net horse power for a 12-hour run per day, storing the water above Lock No. 9 during the 12 idle hours.

It is to be remembered that the above estimates of power are for low season during ordinary years. There will be exceptional periods of minimum water in extremely dry years in which the entire flow of the river will be as low as 100 second-feet, and will, therefore, barely suffice for lockage during a busy season of boating on the river. See Nineteenth Annual Report, United States Geological Survey, Part IV, page 251. But such seasons are rare, and the facilities for water transportation should compensate for them to a great extent. It is admitted that the cheapness of coal along this river would naturally make the water powers less valuable, but the cheapness of development in connection with Government dams would partly offset the cheapness of coal. It is believed that the proposed development at Squaw Shoals could be made at a very moderate cost, and that such an investment would pay handsomely.

APPENDIX TO BLACK WARRIOR REPORT.

The following additional information concerning the Warrior and Black Warrior River is from Mr. R. C. McCalla, U. S. Assistant Engineer, Tuscaloosa, Ala., who is in charge of the improvements on that river.

Tuscaloosa is 361 miles by river above Mobile, and above here the river is called the Black Warrior, and below it is called the Warrior. The locks on the two parts of the stream are numbered as two separate systems, the lowest lock in each system being No. 1, and the numbers running up stream. The following table gives the lift and location of the locks in both systems:

No. of lock.	Lift in feet.	Miles above Mobile.		
1	10.00	230.5	.....	0.5 miles below mouth of Warrior; located but not begun.
2	10.00	246.2	.....	Located but not begun.
3	10.00	266.7	.....	Located but not begun.
4	10.00	282.3	.....	Under construction.
5	10.00	298.3	.....	Under construction.
6	10.00	315.2	.....	Under construction.
1	9.86	361.9	.....	In operation.
2	8.50	362.3	.....	In operation.
3	10.50	363.1	.....	In operation.
4	12.14	370.1	.....	Under construction.

Between Lock No. 4 and the junction of Mulberry and Locust Forks, 407.8 miles above Mobile, there are projected seven locks at 14 feet lift each, but none of these are yet located. The following table gives the location, etc., of gages now established and read daily at 7 A. M.:

Name of Gauge.	No. of gauges.	Miles above Mobile.	Elevation of zero above mean low tide, Mobile.	Remarks.
Demopolis	1	229.7	28.07	Zero, about 1½ ft. above mean low water.
Millwood	1	259.8	45.97	Zero about mean low water.
Lock 4.....	1	282.3	54.50	Zero top of lower mitre sill.
A. G. S. bidge	1	288.0	61.26	Zero about mean low water.
Lock 5.....	1	298.3	64.50	Zero top of lower mitre sill.
Lock 6.....	1	315.2	74.50	Zero top of lower mitre sill.
Grays Landg.	1	319.5	80.41	Zero about mean low water.
Tuscaloosa	1	361.1	86.86	Zero about 1 ft. above mean low water.
Lock 1.....	2	361.9	84.36	Zero top of lower mitre sill.
Lock 2.....	2	362.3	94.36	Zero top of lower mitre sill.
Lock 3.....	2	363.1	102.86	Zero top of lower mitre sill.
Lock 4.....	1	370.1	113.36	Zero top of lower mitre sill.
Cordova	1	445.0	237.55	Zero about mean low water.

5. BLACK WARRIOR RIVER TRIBUTARIES.

At Clear Creek Falls, in Winston County, within a distance of half a mile, there is a fall of over 100 feet, distributed as follows:

Rapids above Upper Falls in 100 yards.....	6 feet fall
Upper Falls, about	45 feet fall
Still pool for 275 yards	00 feet fall
Lower Falls	27 feet fall
Rapids below Lower Falls	30 feet fall

No discharge measurements have ever been made on this stream. It is thought best not to attempt to approximate its flow by any water-shed rule, as the stream originates from big springs. Actual discharge measurements will be made during 1902.

Little Warrior, or Locust Fork, is an important stream on which no surveys have been made. On December 1, 1901, a hydrographic station was established on this stream at Palos, Ala., by Mr. R. C. McCalla, U. S. Assistant Engineer, and will be maintained by him.

Mr. B. M. Hall and his assistants will make a series of discharge measurements at this station during 1902. The only measurement so far was on January 18, 1902. The gage stood at 0.85, and the discharge was 849 second-feet.

There are other tributaries having shoals that can be developed, but they have not been examined.

CHAPTER VI.

1. TOMBIGBEE RIVER AT COLUMBUS, MISSISSIPPI.

This station is located about 1,000 feet below the highway bridge, $1\frac{1}{2}$ miles from the Southern Railway depot at Columbus. The rod, which is in three sections, is fastened vertically to the rock bluff on the left bank. It is a 3-inch by 10-inch pine timber 45 feet long, marked with brass figures and copper nails, the graduation extending from -5.0 feet to $+40.0$ feet. The initial point of sounding is the end of the iron bridge, right bank, downstream side. Bench mark No. 1 is 250 feet from the initial point of sounding. The bridge floor is 40.85 feet above the zero of the rod, and the top of the iron girder under the floor timbers is 39.85 feet above the zero. Bench mark No. 2 is the top of the rail at the depot of the Southern Railway, and is 55.2 feet above gage datum and 190.9 feet above mean sea level. The width of the river at low water is 160 feet. The maximum record height of the river was on April 8, 1892, when the gage registered 42 feet. The lowest recorded height was on October 26, 1893, when the gage reading was -3.9 feet. The danger line is at 33 feet. No measurements of discharge were made during 1900.

Daily gage height in feet of Tombigbee River at Columbus, Miss., for 1900.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	3.5	0.4	7.1	4.5	8.0	1.0	19.7	5.8	-1.2	-2.7	+2.6	+3.4
2.....	2.2	.3	6.8	3.8	6.5	8.0	18.3	4.0	-1.0	-2.8	+4.9	+2.5
3.....	1.8	.2	5.6	2.7	5.9	10.0	17.6	2.8	-1.0	-3.0	+5.5	+1.9
4.....	1.6	.4	4.4	1.9	4.5	13.4	16.2	1.9	.7	-3.1	+5.1	+1.0
5.....	1.4	1.8	3.8	1.5	2.8	15.3	15.9	1.0	.6	-3.3	+4.4	-.1
6.....	1.2	3.5	3.4	1.3	1.5	17.0	15.4	.0	.9	-3.5	+3.1	-.2
7.....	1.1	3.5	7.6	1.3	.8	20.7	14.5	-.5	-1.3	-3.5	+1.9	-.3
8.....	1.0	3.3	14.4	1.1	.5	23.6	13.5	-.9	-1.9	-2.2	+1.9	+.3
9.....	.9	4.2	15.1	.7	1.4	25.5	10.0	-1.4	-2.1	-1.0	.1	.0
10.....	.9	8.4	13.8	.5	2.3	25.0	6.8	-1.8	-2.3	-.6	.5	-.3
11.....	2.0	7.8	11.3	11.7	3.3	23.6	5.5	-2.2	-2.4	-.4	-.9	+.5
12.....	6.6	7.6	9.9	16.2	3.6	21.6	4.0	-2.6	-2.5	+2.6	-1.1	+.6
13.....	8.3	10.2	6.7	17.4	2.8	20.0	3.5	-2.6	-2.6	+4.8	-1.3	+.9
14.....	7.1	9.8	4.3	19.3	2.2	18.5	2.0	-2.7	-2.7	+5.2	-1.3	+.9
15.....	5.6	8.1	4.8	20.8	1.6	17.8	1.9	-2.2	-2.7	+5.6	-1.4	+.9
16.....	4.6	5.8	5.6	20.3	+.7	17.1	1.5	-2.2	-2.8	+5.4	-1.5	+.9
17.....	2.8	4.6	5.2	22.9	.0	17.3	1.0	-2.3	-2.9	+2.4	-1.5	+.9
18.....	2.4	3.8	4.6	26.9	-.4	17.8	.5	-2.3	-3.0	+.4	-1.6	-1.0
19.....	2.2	3.2	9.4	27.6	-1.0	18.0	.0	-1.8	-3.0	+.4	-1.6	-1.0
20.....	2.1	2.8	15.6	27.5	-.8	16.8	.4	-1.4	-3.1	-.9	-1.6	-1.0
21.....	1.9	3.5	18.2	27.1	-.5	15.2	1.3	-1.1	-3.0	-1.1	-1.6	-1.0
22.....	1.8	5.6	19.0	25.5	-.5	13.5	2.0	-1.6	-2.9	-1.3	+.2	+.3
23.....	1.6	5.4	19.2	23.3	+.1	13.8	1.9	-1.9	-2.7	-1.0	.0	+5.0
24.....	1.4	4.5	18.1	21.3	-.2	18.5	1.4	-2.0	-1.3	-.2	+1.7	+6.0
25.....	1.2	5.0	15.2	19.4	.3	21.5	.7	-1.1	-1.7	+.8	+2.3	+6.6
26.....	1.1	5.0	11.4	17.3	2.3	24.1	.1	+1.2	-2.0	+1.0	+2.8	+6.8
27.....	.9	3.9	7.8	14.8	2.4	25.0	1.8	+.6	-2.2	+5.1	+3.3	+6.1
28.....	.7	4.2	4.6	11.8	2.2	24.8	5.0	-.3	-2.4	+5.6	+3.8	+5.0
29.....	.6	.....	3.9	9.5	1.6	23.5	7.2	-1.1	.....	+3.0	.....	+4.0
30.....	.5	.....	3.1	9.4	1.0	21.7	5.9	-1.0	-2.5	+4.6	+3.9	+4.2
31.....	.4	.....	3.3	.....	.8	.....	6.7	-1.4	-2.5	+4.0	+3.8	+4.8

The following discharge measurements were made during 1901 by K. T. Thomas:

March 11—Gage height, 12.33 feet; discharge, 19,425 second-feet.

April 16—Gage height, 1.10 feet; discharge, 3,926 second-feet.

June 25—Gage height, —2.50; discharge, 698 second-feet.

Oct. 30—Gage height, —3.00; discharge, 657 second-feet.

Daily gage height in feet of Tombigbee River at Columbus, Miss., for 1901.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	4.0	6.6	0.9	2.6	0.9	1.3	-1.6	-3.2	-0.4	-2.3	-3.0	-2.2
2.....	3.7	5.9	0.8	6.4	0.5	3.1	-2.4	-3.4	-0.9	-2.0	-3.0	-2.2
3.....	3.2	6.8	2.2	8.0	0.2	3.8	-2.4	-3.5	-1.3	-2.2	-3.0	-2.3
4.....	2.6	12.3	2.4	7.1	0.0	3.9	-2.1	-3.4	-1.6	-2.2	-2.9	-2.3
5.....	1.8	13.2	2.1	6.8	-0.3	3.5	-2.4	-3.3	-1.6	-2.5	-2.9	-2.2
6.....	1.0	13.9	1.8	6.2	-0.5	3.1	-1.6	-3.2	-1.9	-2.5	-2.9	-2.2
7.....	0.7	15.1	1.4	5.3	-0.6	2.8	-2.6	-3.0	-2.0	-2.6	-3.0	-2.2
8.....	0.1	15.9	1.2	4.0	-0.9	1.9	-2.6	-2.8	-2.2	-2.7	-2.8	-2.1
9.....	0.0	15.6	1.0	2.9	-1.0	1.4	-2.7	-2.8	-2.3	-2.7	-2.8	-2.0
10.....	0.3	14.5	8.8	2.0	-1.1	1.0	-2.8	-2.9	-2.4	-2.8	-2.8	-1.8
11.....	10.9	13.0	12.1	1.4	-1.2	-0.1	-2.8	-2.9	-2.5	-2.8	-2.7	-1.1
12.....	16.9	12.5	14.0	0.9	-1.2	-0.7	-2.9	-3.1	-2.5	-2.8	-2.8	-0.5
13.....	19.4	12.4	17.8	0.7	-0.4	-1.0	-3.0	-3.0	-2.4	-2.6	-2.8	-0.1
14.....	21.7	11.0	19.4	0.7	+3.3	-0.9	-3.1	-3.2	-2.1	-2.5	-2.8	+4.5
15.....	22.7	8.9	19.0	0.9	4.4	-0.8	-3.1	-1.5	-1.8	-2.2	-2.8	9.5
16.....	22.3	6.0	17.1	1.2	4.4	-0.8	-3.2	+4.0	-1.0	-2.0	-2.7	9.8
17.....	20.9	4.4	13.8	1.5	3.6	-0.8	-3.2	11.5	-0.2	-2.0	-2.7	9.2
18.....	18.8	3.3	10.8	6.0	2.7	-1.0	-3.0	12.4	+2.5	-2.2	-2.7	9.8
19.....	16.0	2.7	8.0	11.8	2.1	-1.2	-3.0	12.4	3.4	-2.3	-2.6	10.0
20.....	13.6	2.2	6.3	12.2	2.1	-1.7	-3.0	14.0	3.5	-2.4	-2.5	8.8
21.....	9.4	1.8	4.6	12.7	6.3	-2.0	-2.0	15.6	2.6	-2.5	-2.4	5.9
22.....	6.2	1.5	3.5	13.5	6.7	-2.2	-1.9	16.9	1.4	-2.6	-2.2	4.8
23.....	3.8	1.2	3.2	13.5	6.3	-2.4	-2.3	14.8	0.4	-2.7	-2.3	2.4
24.....	3.0	1.0	3.1	11.8	5.3	-2.5	-2.5	12.1	-0.6	-2.8	-2.1	1.4
25.....	5.9	1.0	2.8	8.2	4.0	-2.5	-2.6	8.9	-1.2	-2.9	-2.0	0.8
26.....	6.5	1.1	2.5	5.1	2.2	-2.6	-2.9	6.5	-1.6	-2.9	-1.9	0.7
27.....	6.3	1.2	2.2	3.4	1.5	-2.6	-3.0	4.1	-1.9	-2.9	-1.8	1.1
28.....	6.0	1.0	1.9	2.5	1.8	-2.6	-3.1	2.0	-2.1	-2.9	-1.8	1.0
29.....	5.8	.....	1.6	1.8	1.7	-2.7	-3.2	1.6	-2.2	-3.0	-2.0	9.0
30.....	5.7	.....	1.4	1.3	1.2	-2.6	-3.3	1.1	-2.3	-3.0	-2.1	11.0
31.....	5.5	.....	2.3	.....	0.9	.....	-3.4	0.3	.....	-3.0	.....	9.6

Rating table for Tombigbee River at Columbus, Miss., for 1900 and 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.
-3.0	650	1.0	3,790	5.0	9,310	9.0	14,830
-2.9	668	1.1	3,928	5.1	9,448	9.1	14,968
-2.8	688	1.2	4,066	5.2	9,586	9.2	15,106
-2.7	712	1.3	4,204	5.3	9,724	9.3	15,244
-2.6	736	1.4	4,342	5.4	9,862	9.4	15,382
-2.5	752	1.5	4,480	5.5	10,000	9.5	15,520
-2.4	780	1.6	4,618	5.6	10,138	9.6	15,658
-2.3	810	1.7	4,756	5.7	10,276	9.7	15,796
-2.2	842	1.8	4,894	5.8	10,414	9.8	15,934
-2.1	877	1.9	5,032	5.9	10,552	9.9	16,072
-2.0	915	2.0	5,170	6.0	10,690	10.0	16,210
-1.9	956	2.1	5,308	6.1	10,828	10.1	16,348
-1.8	1,000	2.2	5,446	6.2	10,966	10.2	16,486
-1.7	1,047	2.3	5,584	6.3	11,104	10.3	16,624
-1.6	1,097	2.4	5,722	6.4	11,242	10.4	16,762
-1.5	1,150	2.5	5,860	6.5	11,380	10.5	16,900
-1.4	1,206	2.6	5,998	6.6	11,518	10.6	17,038
-1.3	1,265	2.7	6,136	6.7	11,656	10.7	17,176
-1.2	1,328	2.8	6,274	6.8	11,794	10.8	17,314
-1.1	1,394	2.9	6,412	6.9	11,932	10.9	17,452
-1.0	1,464	3.0	6,550	7.0	12,070	11.0	17,590
-0.9	1,537	3.1	6,688	7.1	12,208	11.5	18,280
-0.8	1,613	3.2	6,826	7.2	12,346	12.0	18,970
-0.7	1,692	3.3	6,964	7.3	12,484	12.5	19,660
-0.6	1,775	3.4	7,102	7.4	12,622	13.0	20,350
-0.5	1,863	3.5	7,240	7.5	12,760	13.5	21,040
-0.4	1,957	3.6	7,378	7.6	12,898	14.0	21,730
-0.3	2,057	3.7	7,516	7.7	13,036	14.5	22,420
-0.2	2,165	3.8	7,654	7.8	13,174	15.0	23,110
-0.1	2,283	3.9	7,792	7.9	13,312	15.5	23,800
0.0	2,410	4.0	7,930	8.0	13,450	16.0	24,490
0.1	2,548	4.1	8,068	8.1	13,588	16.5	25,180
0.2	2,686	4.2	8,206	8.2	13,726	17.0	25,870
0.3	2,824	4.3	8,344	8.3	13,864	17.5	26,560
0.4	2,962	4.4	8,482	8.4	14,002	18.0	27,250
0.5	3,100	4.5	8,620	8.5	14,140	18.5	27,940
0.6	3,238	4.6	8,758	8.6	14,278	19.0	28,630
0.7	3,376	4.7	8,896	8.7	14,416	19.5	29,320
0.8	3,514	4.8	9,034	8.8	14,554	20.0	30,010
0.9	3,652	4.9	9,172	8.9	14,692		

Estimated monthly discharge of Tombigbee River at Columbus, Miss.
 [Drainage area, 4,440 square miles.]

Month	Discharge in second-feet.			Run-off.	
	Maxi- mum.	Mini- mum.	Mean.	Depth in inches.	Second feet per square mile.
1900.					
January	13,864	2,962	5,588	1.26	1.45
February	16,486	2,686	8,659	1.95	2.03
March	23,938	6,688	15,285	3.42	3.85
April	40,498	3,100	21,265	4.79	5.34
May	13,450	1,464	4,944	1.11	1.28
June	37,600	37,90	27,692	6.24	6.96
July	29,596	2,410	11,411	2.57	2.97
August	10,414	707	2,257	.51	.59
September	1,775	632	950	.21	.23
October	10,138	566	3,989	.90	1.04
November	10,000	1,097	4,304	.97	1.08
December	11,794	1,464	5,239	1.18	1.36
The year	40,498	566	9,299	2.09	28.18
1901.					
January	33,736	2,410	14,193	3.20	3.69
February	24,352	3,790	12,533	2.83	2.95
March	29,182	3,514	10,884	2.45	2.33
April	21,040	3,376	9,890	2.23	2.49
May	11,656	1,328	4,949	1.11	1.28
June	7,792	707	2,767	.62	.69
July	10,97	582	730	.16	.18
August	24,352	582	7,673	1.73	1.99
September	7,240	753	2,008	.45	.50
October	915	650	748	.17	.20
November	1,000	650	756	.17	.19
December	17,590	810	6,730	1.52	1.75
The year	33,736	582	6,155	1.39	18.74

Minimum monthly discharge of Tombigbee River at Columbus, Miss., with corresponding net horse power per foot of fall on a water wheel realizing 80 per cent. of the theoretical power.
[Drainage area, 4,440 square miles.]

	1900			1901		
	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.	Minimum cubic feet per second.	Minimum net H. P. per foot fall.	No. of days duration of minimum.
January	2,962	269	1	2,410	219	1
February	2,686	244	1	3,790	345	3
March	6,688	608	1	3,514	319	1
April	3,100	282	1	3,376	307	2
May	1,464	133	1	1,328	121	2
June	3,790	345	1	707	65	1
July	2,410	219	1	582	53	1
August	707	65	1	582	53	1
September	632	57	1	753	68	2
October	566	51	2	650	59	3
November	1,097	100	4	650	59	4
December	1,464	133	4	810	74	2

NOTE.—To find the minimum net horse power available at a shoal on this stream, near this station, for any month, multiply the total fall of the shoal by the "Net H. P. per foot of fall" in this table for that month.

2. TOMBIGBEE RIVER NEAR EPES, ALABAMA.

A record of gage heights has been kept at this station for the last ten years by the Alabama Great Southern Railway Company. The gage is painted on the center brick pier of the railway bridge of that company across the Tombigbee a half mile east of Epes, and is referred to two bench marks, the first, the top of the iron girder at the third cross-beam at the station, 80 feet from the right-bank end of the iron bridge, is 64.70 feet above datum of gage; the second, the top of the cross-tie or the base of the rail at the station, 80 feet from the right-bank end of the iron bridge, is 65.50 feet above datum of gage. The west bank of the river is a solid wall of limestone, the east bank is flat and is subject to overflow. The trestle at the east end of the bridge is seven-eighths of a mile long. The section is good, though the water is very deep and rather swift.

Daily gage height in feet of Tombigbee River near Epes, Ala., for 1900.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	8.5	3.0	18.0	24.5	43.0	6.0	44.5	14.5	2.0	0.5	7.0	8.0
2.....	7.5	3.0	19.0	19.5	41.0	8.0	44.5	12.0	2.5	.5	8.0	7.5
3.....	6.5	3.0	18.0	16.0	39.0	15.0	44.5	10.5	2.0	.5	9.0	7.0
4.....	6.0	3.0	17.0	12.0	33.5	21.0	44.0	8.0	2.0	.5	8.5	6.0
5.....	5.5	5.0	15.0	10.0	28.0	24.5	42.5	6.0	2.0	.5	8.5	5.0
6.....	5.0	6.0	14.0	8.0	20.5	27.0	42.0	5.0	2.0	.5	7.5	4.5
7.....	4.5	7.0	13.0	7.5	16.0	29.5	41.0	5.0	2.0	.5	7.0	4.0
8.....	4.0	7.5	13.0	7.5	10.0	32.0	40.0	4.0	2.0	.5	5.5	4.0
9.....	3.5	11.5	21.0	7.0	7.0	34.5	39.0	3.0	2.0	.5	4.5	4.0
10.....	3.5	13.5	23.0	6.5	7.0	37.0	38.0	2.0	2.0	2.0	4.0	3.5
11.....	13.0	15.0	24.0	20.5	7.0	38.5	34.0	2.0	1.5	4.0	4.0	3.0
12.....	20.0	20.5	24.0	26.0	8.0	39.5	26.0	2.0	1.5	6.0	3.0	3.0
13.....	23.0	26.0	23.0	29.0	8.0	40.5	23.0	2.0	1.5	7.5	3.0	3.5
14.....	23.5	28.0	20.0	30.0	7.0	41.0	15.5	2.0	2.0	8.5	2.5	3.5
15.....	22.0	28.0	17.5	31.0	6.0	41.5	13.0	2.0	1.5	10.0	2.0	3.5
16.....	21.0	26.0	17.0	38.0	6.0	42.0	8.0	1.5	1.0	10.5	2.0	3.0
17.....	18.5	24.0	18.0	46.0	5.0	42.0	7.0	1.5	1.0	10.0	2.0	3.0
18.....	15.0	22.0	18.0	48.5	4.0	42.0	6.0	1.5	1.0	7.5	2.0	3.0
19.....	11.5	18.5	18.5	51.0	3.5	41.5	5.0	1.5	1.0	5.0	2.5	3.0
20.....	10.0	16.0	26.0	51.5	3.5	41.5	6.5	1.5	.5	4.0	2.5	6.0
21.....	8.5	14.0	30.0	52.0	3.5	41.5	7.0	1.0	.5	3.5	3.0	5.0
22.....	8.0	15.0	32.0	52.0	3.5	41.0	8.0	1.0	.5	3.0	3.5	5.0
23.....	8.0	17.5	34.0	51.5	3.5	41.0	9.0	2.0	.5	2.0	3.5	8.5
24.....	7.0	18.0	35.5	51.0	4.0	42.5	8.0	1.5	.5	2.0	3.5	10.0
25.....	6.5	17.0	37.5	49.5	4.5	42.5	6.0	1.5	.5	3.0	6.5	11.5
26.....	6.0	17.0	38.0	47.5	5.0	43.5	5.5	1.5	.5	4.0	8.5	11.5
27.....	5.0	16.0	39.0	47.0	6.0	43.5	5.0	5.0	.5	4.5	7.5	12.5
28.....	3.0	17.0	38.5	46.5	7.0	43.5	5.5	4.5	.5	7.5	7.5	12.0
29.....	3.0	.....	35.0	46.0	7.0	44.0	14.0	4.0	.5	9.0	8.0	10.0
30.....	3.0	.....	33.0	44.5	6.0	44.5	14.5	3.0	.5	8.0	8.5	10.0
31.....	3.0	.....	30.0	.....	5.0	.....	14.5	2.0	.....	7.5	.....	10.5

The following discharge measurements were made during 1901 by K. T. Thomas:

Jan. 31—Gage height, 12.70 feet; discharge, 13,738 second-feet.

March 14—Gage height, 21.10 feet; discharge, 23,824 second-feet.

June 28—Gage height, 1.00 feet; discharge, 1,496 second-feet.

Nov. 13—Gage height, 0.70 feet; discharge, 1,290 second-feet.

Daily gage height in feet of Tombigbee River near Epes, Ala., for 1901.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	10.0	12.0	6.5	13.0	7.5	5.5	1.0	.....	5.5	1.5	0.7	1.7
2.....	10.0	10.5	6.5	13.5	7.0	6.0	1.0	.....	4.0	6.0	0.7	1.7
3.....	9.0	16.8	9.0	15.5	6.0	7.0	1.0	.....	3.5	2.5	0.7	1.7
4.....	8.0	21.5	9.0	18.0	5.0	9.0	1.0	.....	2.5	1.5	0.0	3.5
5.....	7.0	25.5	8.5	17.0	4.5	9.0	1.0	.....	2.0	1.5	0.0	2.0
6.....	6.0	26.5	7.0	16.0	5.0	11.0	1.0	.....	2.0	1.5	0.0	2.0
7.....	5.5	27.5	6.5	15.0	4.0	12.0	1.0	.....	1.5	1.5	0.0	2.0
8.....	5.0	29.0	6.5	14.0	3.5	10.0	1.0	.....	1.5	1.0	0.0	3.5
9.....	4.5	30.5	6.5	11.0	3.5	8.0	1.0	.....	1.5	1.0	0.7	5.9
10.....	4.0	31.0	13.0	9.5	3.0	6.5	1.0	.....	1.5	1.0	0.7	6.5
11.....	18.0	31.0	18.0	8.0	3.0	5.5	0.5	.....	1.5	1.0	0.7	5.5
12.....	29.5	31.0	19.5	7.5	3.5	4.5	0.5	.....	1.5	1.0	0.7	4.7
13.....	33.0	30.0	20.0	9.0	4.0	4.0	0.5	.....	1.0	1.0	0.7	4.2
14.....	35.0	29.5	24.5	8.0	7.0	3.5	0.5	.....	1.0	1.0	0.7	13.0
15.....	36.0	28.5	25.5	7.0	8.0	3.5	0.5	.....	1.0	1.0	0.7	19.5
16.....	38.0	26.0	26.5	7.0	8.5	3.5	0.5	8.5	1.5	1.0	0.7	22.0
17.....	39.0	23.0	26.5	6.5	8.0	3.0	0.5	15.0	2.0	1.0	1.0	23.0
18.....	39.5	16.0	26.0	20.0	7.0	3.0	0.5	20.0	2.5	1.0	1.7	22.5
19.....	40.0	12.0	25.0	28.0	6.5	2.5	0.5	22.5	6.0	1.0	1.7	22.0
20.....	40.5	1.00	23.0	29.5	9.0	2.0	1.0	23.0	.....	1.0	1.5	20.0
21.....	39.0	8.5	20.0	30.0	12.0	2.0	1.0	24.0	7.5	1.0	1.5	18.0
22.....	38.0	8.0	17.0	29.5	12.0	2.0	1.0	24.5	7.5	1.0	1.7	14.0
23.....	34.5	7.5	12.5	28.5	11.5	1.5	1.0	26.0	7.0	1.0	1.7	12.0
24.....	29.0	7.0	11.0	28.0	11.0	1.2	1.0	26.5	5.5	0.5	1.8	9.0
25.....	24.5	6.5	12.0	27.0	10.0	1.0	1.0	26.0	4.0	0.5	1.8	8.0
26.....	20.0	6.5	13.5	24.0	8.0	1.0	1.0	25.0	3.0	0.5	2.0	7.0
27.....	16.0	6.5	13.5	18.0	6.0	1.0	0.5	23.0	2.0	0.5	2.0	7.0
28.....	15.0	6.5	11.5	13.0	6.5	1.0	0.5	19.0	1.5	0.5	2.0	12.0
29.....	14.0	.....	10.0	11.0	6.5	1.0	0.2	12.0	1.5	0.5	1.9	20.0
30.....	13.0	.....	9.0	8.0	6.5	1.0	0.2	6.5	1.5	0.5	1.8	26.0
31.....	12.7	.....	13.5	.....	7.0	.....	0.2	5.5	.....	0.5	.....	27.0

Rating table for Tombigbee River at Epes, Ala., for 1900-1901..

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second-ft.	Feet.	Second-ft.	Feet.	Second -ft.	Feet.	Second ft.
—0.2	810	5.4	5,208	11.0	11,700	16.6	18,420
—0.1	840	5.5	5,308	11.1	11,820	16.7	18,540
0.0	880	5.6	5,409	11.2	11,940	16.8	18,660
0.1	830	5.7	5,511	11.3	12,060	16.9	18,780
0.2	985	5.8	5,613	11.4	12,180	17.0	18,900
0.3	1,043	5.9	5,716	11.5	12,300	17.1	19,020
0.4	1,103	6.0	5,820	11.6	12,420	17.2	19,140
0.5.	1,164	6.1	5,925	11.7	12,540	17.3	19,260
0.6	1,226	6.2	6,030	11.8	12,660	17.4	19,380
0.7	1,289	6.3	6,136	11.9	12,780	17.5	19,500
0.8	1,353	6.4	6,243	12.0	12,900	17.6	19,620
0.9	1,418	6.5	6,350	12.1	13,020	17.7	19,740
1.0	1,484	6.6	6,458	12.2	13,140	17.8	19,860
1.1	1,551	6.7	6,566	12.3	13,260	17.9	19,980
1.2	1,619	6.8	6,675	12.4	13,380	18.0	20,100
1.3	1,688	6.9	6,785	12.5	13,500	18.1	20,220
1.4	1,758	7.0	6,900	12.6	13,620	18.2	20,340
1.5	1,829	7.1	7,020	12.7	13,740	18.3	20,460
1.6	1,903	7.2	7,140	12.8	13,860	18.4	20,580
1.7	1,976	7.3	7,260	12.9	13,980	18.5	20,700
1.8	2,050	7.4	7,380	13.0	14,100	18.6	20,020
1.9	2,125	7.5	7,500	13.1	14,220	18.7	20,940
2.0	2,200	7.6	7,620	13.2	14,340	18.8	21,060
2.1	2,276	7.7	7,740	13.3	14,460	18.9	21,180
2.2	2,353	7.8	7,860	13.4	14,580	19.0	21,300
2.3	2,431	7.9	7,980	13.5	14,700	19.1	21,420
2.4	2,510	8.0	8,100	13.6	14,820	19.2	21,540
2.5	2,590	8.1	8,220	13.7	14,940	19.3	21,660
2.6	2,671	8.2	8,340	13.8	15,060	19.4	21,780
2.7	2,753	8.3	8,460	13.9	15,180	19.5	21,900
2.8	2,835	8.4	8,580	14.0	15,300	19.6	22,020
2.9	2,918	8.5	8,700	14.1	15,420	19.7	22,140
3.0	3,002	8.6	8,820	14.2	15,540	19.8	22,260
3.1	3,087	8.7	8,940	14.3	15,660	19.9	22,380
3.2	3,172	8.8	9,060	14.4	15,780	20.0	22,500
3.3	3,258	8.9	9,180	14.5	15,900	20.1	22,620
3.4	3,345	9.0	9,300	14.6	16,020	20.2	22,740
3.5	3,432	9.1	9,420	14.7	16,140	20.3	22,860
3.6	3,520	9.2	9,540	14.8	16,260	20.4	22,980
3.7	3,609	9.3	9,660	14.9	16,380	20.5	23,100
3.8	3,698	9.4	9,780	15.0	16,500	20.6	23,220
3.9	3,788	9.5	9,900	15.1	16,620	20.7	23,340
4.0	3,878	9.6	10,020	15.2	16,740	20.8	23,460
4.1	3,969	9.7	10,140	15.3	16,860	20.9	23,580
4.2	4,060	9.8	10,260	15.4	16,980	21.0	23,700

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second-ft.	Feet.	Second-ft.	Feet.	Second-ft.	Feet.	Second-feet.
4.3	4,152	9.9	10,380	15.5	17,100	21.1	23,820
4.4	4,245	10.0	10,500	15.6	17,220	21.2	23,940
4.5	4,338	10.1	10,620	15.7	17,340	21.3	24,060
4.6	4,432	10.2	10,740	15.8	17,460	21.4	24,180
4.7	4,527	10.3	10,860	15.9	17,580	21.5	24,300
4.8	4,622	10.4	10,980	16.0	17,700	21.6	24,420
4.9	4,718	10.5	11,100	16.1	17,820	21.7	24,540
5.0	4,815	10.6	11,220	16.2	17,940	21.8	24,660
5.1	4,912	10.7	11,340	16.3	18,060	21.9	24,780
5.2	5,010	10.8	11,460	16.4	18,180	22.0	24,900
5.3	5,109	10.9	11,580	16.5	18,300		

NOTE.—This table applied to the foregoing "Daily gage heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.

Estimated monthly discharge of Tombigbee River at Epes, Ala.

[Drainage area, 8,830 square miles.]

Month.	Discharge in second-feet.			Run-off.	
	Maxi-mum.	Mini-mum.	Mean.	Second-feet per square mile.	Depth in inches.
1901.					
January	47,100	3,878	25,579	2.90	3.34
February	35,700	6,350	20,999	2.38	2.48
March	30,300	6,350	16,198	1.83	2.11
April	34,500	6,350	18,102	2.05	2.29
May	12,900	3,002	6,880	.78	.90
June	12,900	1,484	4,585	.52	.58
July	1,484	810	1,295	.15	.17
August 16-31 .....	.....	.....	21,541	2.44	1.41
September	7,500	1,484	3,205	.36	.40
October	5,820	1,164	1,633	.18	.21
November	2,200	880	1,550	.18	.20
December	30,900	1,960	12,249	1.39	1.60

Minimum monthly discharge of Tombigbee River at Epes, Ala., with corresponding net horse power per foot of fall on a water wheel realizing 80 per cent. of the theoretical power.

[Drainage area, 8,830 square miles.]

	1900.			1901.		
	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.	Minimum cubic feet per second.	Minimum net H. P. per foot fall.	No. of days duration of minimum.
January	3,002	273	4	3,878	353	1
February	3,002	273	4	6,350	577	4
March	14,100	1,282	1	6,350	577	5
April ..	6,350	577	1	6,350	577	1
May	3,432	312	5	3,002	273	2
June	5,820	529	1	1,484	135	6
July	4,815	438	2	810	74	3
August	1,484	135	2	.....	.....	.....
September	1,164	106	11	1,484	135	3
October	1,164	106	9	1,164	106	8
November	2,200	200	4	880	80	5
December	3,002	273	5	1,960	178	3

NOTE—To find the minimum net horse power available at a shoal on this stream, near this station, for any month, multiply the total fall of the shoal by the "net H. P. per foot of fall" in this table for that month.

3. TRIBUTARIES.

There are several large creeks in Marion and Lamar Counties that flow into Mississippi, and enter the Tombigbee River near Columbus. One of these, the Buttahatchee Creek, in Marion County, has numerous rapids, especially near the crossing of the Military Road.

Luxapalila Creek, in Lamar County, has two prongs that are both good power streams. They come together before the creek enters Mississippi, making Big Luxapalila Creek, which enters the Tombigbee at Columbus, Miss. The following measurements have been made on this stream at Columbus, Miss.:

1901.

March 11—Gage height, 8.20 feet; discharge, 2,459 second-feet.

April 16—Gage height, 4.45 feet; discharge, 873 second-feet.

June 26—Gage height, 1.90 feet; discharge, 109 second-feet.

Oct. 31—Gage height, 2.00 feet; discharge, 126 second-feet.

CHAPTER VII.

1. TENNESSEE RIVER AT CHATTANOOGA, TENNESSEE.

This river, after passing Chattanooga, enters Alabama. It then makes a bend to the west and later to the north, returning to Tennessee. Flowing through this State and Kentucky, it empties into the Ohio 50 miles above Cairo. In 1879 a gage was established at Chattanooga, Tennessee, at the foot of Look-out street, just below Chattanooga Island, by the Signal Corps of the United States Army, which has been in charge of the Weather Bureau since July 1, 1891. The drainage area above this station is 21,382 square miles, and is mapped on Morristown, Greenville, Roan Mountain, London, Knoxville, Mount Guyot, Asheville, Murphy, Briceville, Standingstone, Wartburg, Pikeville, Maynardville, Cumberland Gap, Jonesville, Estillville, Bristol, Whitesburg, Grundy, Abington, Tazewell, Pocahontas, Wytheville, Cranberry, Morganton, Mount Mitchell, Saluda, Pisgah, Como, Nantahala, Walhalla, Dahlonega, Ellijay, Dalton, Cleveand, Ringgold, Kingston, and Chattanooga atlas sheets. The gage is on an incline railroad iron for about 20 feet of its lower portion. Above this it is a vertical rod, bolted to the rock bluff forming the river bank. The zero of the gage is 630.4 feet above sea level. Measurements are made from the Hamilton County steel highway bridge at the foot of Walnut street, a short distance below the gage. Gage heights are obtained from L. M. Pindell, United States Weather Bureau observer. During the year 1900 a new gage on the same datum was established. It is a vertical rod bolted to the south side of the third stone pier from the south end of the bridge.

Daily gage height of Tennessee River at Chattanooga, Tenn., for 1890.

[Furnished by L. M. Pindell, observer in charge, United States Weather Bureau.]

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	4.9	8.0	40.2	10.0	7.5	6.1	3.2	5.8	7.6	9.4	6.8	2.4
2.....	5.2	7.3	42.5	9.8	7.1	6.6	2.9	5.2	5.6	8.1	6.6	2.4
3.....	5.1	7.3	41.0	9.4	6.7	5.3	2.9	4.7	5.7	7.7	5.7	2.3
4.....	5.0	7.4	34.4	9.7	6.8	5.3	3.0	4.7	4.0	7.2	5.3	2.3
5.....	5.0	7.2	23.0	12.2	7.0	5.2	3.0	4.8	3.6	6.4	5.0	2.3
6.....	4.8	7.8	15.1	14.0	7.5	5.3	3.0	4.5	3.2	5.7	4.6	2.5
7.....	4.7	8.3	14.2	13.6	8.9	5.2	3.0	5.2	3.6	5.2	4.4	2.8
8.....	4.6	11.5	14.4	13.4	9.1	4.9	2.9	5.7	3.2	5.2	4.3	2.9
9.....	4.7	19.3	12.8	11.9	8.7	4.7	2.8	6.6	2.8	5.5	4.0	7.1
10.....	4.9	20.4	11.2	10.5	8.7	4.5	2.7	7.5	2.8	5.3	3.9	8.1
11.....	4.7	17.8	10.0	9.6	8.1	4.5	2.7	7.2	3.0	4.8	3.8	8.2
12.....	4.6	14.7	9.2	8.7	7.7	4.4	3.0	6.3	3.4	4.6	3.6	7.7
13.....	4.6	12.0	8.6	8.0	7.2	4.0	2.7	5.8	3.6	4.4	3.5	7.4
14.....	4.9	10.0	8.7	7.5	6.7	3.9	2.5	5.2	4.6	4.2	3.4	6.4
15.....	4.6	9.8	9.7	7.1	6.6	4.0	2.3	4.8	4.0	3.9	3.3	3.7
16.....	5.4	9.6	13.7	6.9	7.8	4.1	2.1	4.2	4.0	3.7	3.2	4.2
17.....	7.2	9.0	15.1	7.1	9.3	4.0	2.0	3.8	3.7	3.7	3.2	3.9
18.....	9.2	9.3	14.9	9.4	8.6	3.9	2.2	3.7	4.0	3.7	3.0	3.9
19.....	8.2	8.5	13.0	16.6	7.9	3.7	4.7	3.3	5.3	4.2	3.2	4.0
20.....	7.5	7.8	11.7	20.4	8.8	3.6	4.7	3.1	3.7	4.0	3.1	4.0
21.....	7.0	7.3	12.4	18.2	10.7	3.7	4.1	2.6	3.7	4.0	3.1	3.9
22.....	9.6	7.1	14.0	14.3	11.9	3.8	3.5	2.5	5.8	3.8	3.1	3.9
23.....	13.0	7.2	20.0	11.3	11.9	3.7	3.2	3.8	3.5	5.3	2.9	3.9
24.....	12.3	7.4	26.5	9.6	11.6	3.8	3.2	4.0	3.3	7.2	2.8	3.9
25.....	11.7	12.1	27.2	8.7	9.2	4.0	4.1	3.3	3.4	8.8	2.8	4.3
26.....	10.0	18.7	26.0	8.4	7.8	4.0	5.9	3.8	4.0	9.2	2.7	4.6
27.....	8.3	26.4	21.4	8.4	7.4	3.9	7.5	3.6	4.3	9.5	2.6	9.4
28.....	7.3	34.8	15.4	8.5	8.0	3.9	7.7	3.0	4.0	8.6	2.6	12.5
29.....	6.6	.....	13.0	8.4	8.1	3.5	7.0	3.8	3.8	7.6	2.5	12.9
30.....	7.7	.....	11.9	8.1	7.4	3.1	6.3	5.4	5.3	7.1	2.4	12.4
31.....	8.3	.....	10.7	.....	6.8	.....	6.2	6.5	.....	7.0	.....	9.3

Daily gage height of Tennessee River at Chattanooga, Tenn., for 1891.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	7.7	9.8	18.6	15.4	5.9	5.8	3.9	8.3	5.4	1.8	1.3	3.7
2.....	7.8	13.2	17.5	16.3	5.7	5.6	3.8	10.3	4.7	1.9	1.3	3.2
3.....	9.9	16.1	15.6	16.3	5.6	5.3	3.6	15.1	4.3	1.9	1.3	2.9
4.....	14.1	19.8	13.3	15.7	5.5	4.8	3.6	16.4	4.2	1.8	1.2	2.8
5.....	15.5	22.6	15.4	15.1	5.2	4.4	3.6	12.0	5.1	1.8	1.2	5.6
6.....	15.2	21.6	20.0	12.6	5.1	4.1	3.6	8.7	5.1	1.7	1.2	6.1
7.....	10.4	18.3	23.6	11.6	4.9	3.9	3.4	6.9	5.2	1.7	1.2	6.6
8.....	8.2	16.9	29.1	10.8	4.7	4.1	3.4	5.8	5.2	1.6	1.2	8.6
9.....	7.1	14.5	34.5	9.8	4.6	4.6	3.3	5.1	5.8	1.7	1.2	10.8
10.....	6.3	21.0	37.5	9.6	4.5	4.7	4.5	4.6	4.9	1.7	1.2	10.9
11.....	6.5	27.8	38.9	9.8	4.4	5.5	5.1	4.4	4.4	1.8	1.5	10.2
12.....	8.9	34.3	37.6	9.9	4.3	7.0	4.4	4.0	3.9	1.8	1.7	8.5
13.....	10.7	36.5	33.5	10.6	4.2	6.5	3.9	4.0	3.6	1.7	2.7	6.8
14.....	10.0	37.5	27.0	11.3	4.1	5.7	3.5	3.9	3.5	1.7	3.6	5.7
15.....	9.2	35.5	22.2	12.2	4.2	5.5	3.1	3.8	3.5	1.7	4.1	5.1
16.....	7.3	29.0	19.8	10.8	4.2	5.7	2.9	3.6	3.5	1.6	3.5	5.0
17.....	7.8	21.1	18.1	9.4	4.5	5.8	2.8	3.5	3.5	1.6	2.8	5.2
18.....	7.5	19.7	15.3	8.4	4.7	6.1	2.7	3.4	3.2	1.5	2.5	5.3
19.....	7.5	18.2	13.5	8.2	4.7	6.8	4.1	3.0	2.9	1.5	2.4	4.8
20.....	7.6	16.6	12.3	7.9	4.6	7.3	5.0	3.0	2.7	1.5	2.5	4.5
21.....	7.5	15.5	11.3	7.9	4.5	6.8	4.5	3.4	2.6	1.5	2.3	4.2
22.....	8.2	18.8	10.8	7.6	4.3	6.8	4.0	4.0	2.5	1.5	2.4	4.0
23.....	12.5	24.0	10.7	7.4	4.1	6.5	3.8	4.6	2.4	1.5	3.0	3.8
24.....	15.3	27.7	10.8	7.4	4.0	7.1	3.6	5.5	2.3	1.5	4.6	3.7
25.....	14.0	29.0	10.6	7.5	3.8	7.4	3.5	5.6	2.2	1.5	6.2	4.1
26.....	13.6	26.7	10.4	7.5	3.9	7.6	3.5	7.7	2.2	1.5	6.7	4.9
27.....	11.2	20.6	10.5	7.4	4.0	6.2	3.5	8.2	2.1	1.5	6.3	8.1
28.....	9.7	19.0	14.1	7.2	4.1	4.9	3.6	8.1	2.0	1.5	5.6	10.2
29.....	7.9	.....	13.6	6.5	4.1	4.3	3.7	7.0	1.9	1.4	4.7	9.6
30.....	7.9	.....	13.0	6.2	4.7	4.1	3.8	6.4	1.9	1.4	4.0	8.4
31.....	8.9	.....	13.1	.....	5.3	.....	5.7	6.1	.....	1.4	.....	7.8



Daily gage height of Tennessee River at Chattanooga, Tenn, for 1892.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	6.6	6.5	5.7	9.1	8.7	5.6	6.6	4.2	2.1	2.2	1.1	4.1
2.....	6.6	6.2	5.6	8.3	8.2	5.4	5.6	4.1	1.8	2.0	1.2	4.0
3.....	8.1	6.0	5.5	7.4	7.6	5.5	5.5	4.2	1.7	1.9	1.2	3.8
4.....	8.8	5.8	5.3	6.8	7.3	5.8	5.4	4.0	1.5	1.8	1.6	3.7
5.....	8.7	5.5	5.1	6.5	7.4	8.8	6.6	4.1	1.3	1.7	2.0	3.6
6.....	8.4	5.4	5.0	8.5	7.0	9.2	8.9	4.9	2.2	1.6	2.3	3.6
7.....	9.0	5.3	4.9	21.7	6.6	9.3	11.2	4.2	2.1	1.6	2.4	3.3
8.....	9.8	5.8	5.0	31.6	6.3	8.7	11.8	3.8	2.0	1.5	2.4	3.2
9.....	10.0	8.1	6.0	34.2	6.2	8.6	10.1	3.5	2.0	1.5	2.9	3.2
10.....	9.3	11.5	7.1	34.3	5.9	8.3	8.6	3.3	1.9	1.5	4.4	3.0
11.....	8.1	11.3	8.0	31.0	5.5	7.8	9.0	3.3	2.0	1.5	5.9	2.9
12.....	8.3	10.5	7.9	26.6	5.7	8.0	9.5	3.1	1.8	1.5	6.6	2.7
13.....	11.2	8.9	7.6	18.0	5.7	8.1	9.4	3.5	2.1	1.4	7.0	2.6
14.....	22.9	7.7	7.6	12.9	5.5	7.8	8.9	3.6	2.1	1.4	4.4	2.6
15.....	32.9	7.2	6.8	11.7	5.3	6.0	8.7	3.7	2.1	1.4	4.2	3.3
16.....	37.1	7.4	6.2	10.9	5.2	5.3	8.5	3.5	3.1	1.4	4.8	3.4
17.....	37.9	8.0	5.9	10.0	5.1	4.8	8.4	3.1	4.5	1.4	5.6	5.3
18.....	35.2	7.9	6.5	9.4	4.8	4.4	8.1	2.9	4.1	1.3	6.2	8.1
19.....	26.3	7.5	7.5	8.8	5.1	4.4	7.5	2.8	3.5	1.3	6.4	8.7
20.....	18.7	7.7	8.2	12.3	5.5	4.2	7.2	2.8	3.0	1.2	6.2	8.4
21.....	19.0	7.9	8.2	16.2	6.1	7.0	6.9	3.0	2.8	1.2	5.5	9.1
22.....	19.0	8.9	7.8	16.3	6.5	7.8	6.2	2.9	3.0	1.2	4.8	9.3
23.....	17.4	8.9	7.6	15.5	6.9	7.4	5.6	2.9	2.6	1.2	4.4	8.9
24.....	14.9	8.4	8.4	14.8	7.1	7.1	5.4	3.0	2.3	1.2	4.2	7.8
25.....	12.2	7.9	9.6	13.5	7.6	6.9	5.2	2.7	2.3	1.2	3.9	6.7
26.....	10.5	7.5	9.5	13.7	7.8	6.8	5.0	2.8	3.6	1.1	3.4	5.8
27.....	9.7	6.7	10.0	13.6	6.7	6.7	4.6	3.2	3.6	1.1	3.1	5.2
28.....	8.5	6.4	10.6	10.4	6.2	7.3	4.5	3.6	3.1	1.1	3.0	4.8
29.....	7.7	5.9	10.3	9.1	5.8	7.5	4.3	4.4	2.6	1.1	3.0	4.3
30.....	6.9	.....	9.7	8.8	5.7	7.2	4.1	3.8	2.4	1.1	3.6	3.9
31.....	6.8	.....	9.4	.....	5.6	.....	3.8	3.3	.....	1.1	.....	3.3

*List of discharge measurements made on Tennessee River at Chattanooga, Tennessee.**

No.	Date.	Hydrographer.	Meter No	Gage height, feet.	Area of section, (square feet.)	Mean velocity (ft. per sec.)	Discharge (second-feet.)
1	March 15	L. M. Pindell	...	2	10.3	17,971	63,039
2	March 16	do	...	2	9.2	16,847	58,310
3	April 3	do	...	2	5.1	12,427	32,628
4	April 4	do	...	2	5.1	12,427	32,643
5	May 5	do	...	2	26.0	36,648	156,187
6	May 8	do	...	2	26.0	36,825	151,660
7	May 9	do	...	2	16.0	24,913	96,979
8	May 17	do	...	2	9.9	17,971	65,867
9	May 18	do	...	2	10.4	18,539	67,883

*Meter submerged at one-half depth.

Daily gage height of Tennessee River at Chattanooga, Tenn., for 1893.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	3.4	10.4	8.4	5.5	10.2	7.4	3.9	2.6	8.4	2.6	3.1	2.5
2.....	3.8	12.1	9.1	5.3	9.6	8.0	3.8	2.5	6.8	2.5	3.0	3.9
3.....	4.7	10.6	8.9	5.1	11.0	10.0	4.2	3.1	5.0	2.4	2.8	3.7
4.....	5.7	8.6	8.9	5.1	18.4	8.1	5.2	3.5	6.2	2.4	2.7	4.1
5.....	5.6	8.0	8.7	5.1	24.5	6.6	4.8	3.3	6.0	2.6	2.6	4.3
6.....	5.3	7.7	9.0	5.2	28.2	8.3	3.9	3.2	4.9	2.5	2.5	4.7
7.....	5.2	7.0	9.1	5.4	30.0	16.6	3.8	4.9	4.3	2.9	2.4	4.7
8.....	4.7	6.5	8.8	5.4	28.2	20.7	3.5	5.0	3.5	3.1	2.4	4.5
9.....	4.0	6.1	8.8	5.1	18.0	19.1	3.4	4.1	3.2	2.9	2.3	4.1
10.....	3.8	6.2	9.4	5.1	12.8	15.2	3.6	3.8	2.8	2.9	2.4	4.0
11.....	3.4	8.5	11.1	5.1	11.7	11.8	3.4	3.3	2.8	2.6	2.5	3.7
12.....	2.9	14.7	11.7	5.0	10.4	8.9	3.4	3.0	3.7	2.5	4.8	3.2
13.....	2.9	21.8	11.5	4.8	9.4	7.3	3.3	2.7	5.8	2.4	3.8	3.1
14.....	*	23.6	12.0	10.2	8.8	6.8	3.2	2.5	10.9	2.5	3.6	3.0
15.....	*	22.6	10.6	12.1	8.1	6.5	3.0	2.8	12.7	2.0	3.5	2.9
16.....	*	21.3	9.5	10.4	7.8	6.2	2.8	2.9	9.6	1.7	3.0	3.0
17.....	*	23.6	8.4	8.6	9.4	5.6	2.7	3.8	8.0	9.6	2.8	3.2
18.....	*	29.4	7.6	7.4	10.4	5.4	2.8	5.2	7.0	6.4	2.7	3.5
19.....	*	32.4	7.0	6.5	8.9	5.3	3.0	4.9	6.1	5.7	2.5	3.8
20.....	*	33.4	6.7	6.4	7.7	5.2	3.2	4.0	5.1	5.2	2.6	3.9
21.....	*	32.....	6.3	7.2	7.4	5.4	3.5	2.9	4.2	4.1	2.6	3.9
22.....	*	28.5	6.0	7.2	6.7	5.6	3.6	2.6	3.6	3.4	2.6	3.5
23.....	2.9	18.2	5.8	7.1	6.1	5.7	4.6	2.4	3.4	3.1	2.5	3.3
24.....	3.1	12.3	5.7	6.8	5.7	5.4	5.2	2.3	3.2	2.8	2.5	3.1
25.....	3.1	10.4	6.4	6.7	5.4	5.9	5.5	2.2	3.0	3.1	2.4	2.9
26.....	3.4	9.3	6.8	6.0	5.2	5.6	3.7	1.9	2.9	3.3	2.5	2.8
27.....	3.7	8.4	6.8	5.7	5.0	5.2	3.4	1.8	2.7	4.9	2.6	2.7
28.....	3.8	8.2	6.3	7.0	4.6	5.1	2.9	1.6	2.6	4.6	2.8	2.5
29.....	4.4	.....	5.9	9.5	5.4	4.7	3.7	1.6	2.4	4.0	2.7	2.5
30.....	5.3	.....	5.8	10.4	6.5	4.1	2.6	1.7	2.5	3.5	2.5	2.7
31.....	7.1	.....	5.7	.....	7.4	....	2.6	1.6	.....	3.2	.....	3.1

*Frozen at gage.

Daily gage height of Tennessee River at Chattanooga, Tenn., for 1894.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	2.9	5.1	7.7	5.0	3.9	3.8	4.4	2.9	4.0	0.9	1.4	1.0
2.....	3.4	5.0	8.2	4.8	3.8	3.6	4.0	2.9	3.8	.9	1.7	1.0
3.....	3.8	4.9	9.4	5.4	3.7	3.5	3.7	2.9	3.0	1.0	2.3	.9
4.....	3.9	5.5	9.7	5.3	3.7	3.4	4.4	2.8	2.6	1.5	1.6	.9
5.....	3.5	21.9	9.5	6.8	3.6	3.3	4.2	2.9	2.1	1.8	1.4	.9
6.....	3.1	25.5	9.3	6.9	3.5	3.2	3.7	3.0	2.0	1.8	1.5	.9
7.....	4.9	23.9	8.5	7.2	3.4	2.9	3.2	2.9	1.8	1.5	1.5	.9
8.....	6.1	19.7	8.2	7.4	3.3	2.8	3.3	2.9	1.7	1.3	1.3	.9
9.....	9.3	16.1	7.9	6.6	3.4	2.6	3.1	3.0	1.5	1.1	1.2	1.1
10.....	9.0	16.0	7.2	5.7	3.3	2.5	3.3	2.6	1.4	1.0	1.1	1.2
11.....	8.5	16.7	6.9	5.9	3.2	2.5	3.7	2.3	1.4	.8	1.0	1.6
12.....	7.9	15.4	6.6	7.2	4.7	2.4	3.3	2.1	1.4	.9	1.0	3.8
13.....	8.3	15.2	6.7	8.5	5.1	2.3	2.7	1.9	1.3	1.2	.9	8.6
14.....	8.0	14.1	7.2	7.8	4.8	2.3	2.4	1.8	1.2	1.9	.8	11.1
15.....	7.8	12.2	7.0	7.2	4.3	2.2	2.1	2.0	1.5	2.4	.8	11.2
16.....	7.8	10.3	6.9	6.9	4.0	2.1	1.9	3.6	1.8	2.1	.8	10.8
17.....	7.1	9.5	6.8	6.3	4.1	2.0	1.8	4.6	1.8	1.7	.8	4.6
18.....	7.2	8.6	7.3	5.5	5.2	2.1	2.8	3.5	2.0	1.4	.7	6.6
19.....	6.3	8.4	7.4	5.0	5.0	2.4	2.4	3.0	2.0	1.1	.8	4.7
20.....	6.0	8.3	7.7	5.1	5.4	2.5	2.4	3.1	1.6	1.0	.9	4.2
21.....	5.3	8.5	7.1	4.9	5.6	2.6	3.3	3.6	1.5	.9	.9	3.6
22.....	5.0	8.7	8.8	4.8	6.2	2.5	3.7	3.7	1.5	.8	.9	3.2
23.....	5.0	8.8	8.7	4.7	6.8	2.3	3.8	4.0	1.8	.8	1.0	2.8
24.....	5.2	8.2	8.1	4.6	6.9	2.2	3.4	3.6	1.8	.8	1.0	2.7
25.....	5.3	7.9	7.7	4.5	7.1	2.2	4.0	3.0	1.6	.8	1.1	2.5
26.....	5.2	7.0	7.3	4.3	6.7	2.5	1.4	2.6	1.3	.8	1.2	2.4
27.....	5.4	7.7	7.0	4.2	6.0	2.6	3.9	2.2	1.1	.7	1.2	4.2
28.....	5.4	7.7	6.5	4.1	5.6	2.7	3.8	2.7	1.0	.7	1.1	6.9
29.....	5.1	.....	5.9	4.0	5.1	2.9	3.6	2.4	.9	.7	1.1	8.4
30.....	5.0	.....	5.7	4.0	4.7	4.3	3.3	2.7	.8	1.0	1.1	7.9
31.....	4.9	.....	5.2	.....	4.2	....	3.3	4.3	.....	1.1	.....	5.8

Daily gage height of Tennessee River at Chattanooga, Tenn., for 1895.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	4.7	7.6	6.8	7.8	6.0	5.6	3.2	4.4	3.3	0.9	1.1	1.4
2.....	3.9	7.2	7.3	7.4	5.8	5.2	3.4	4.1	3.4	.8	1.2	1.5
3.....	3.3	7.3	12.1	6.8	5.5	4.8	3.8	3.8	3.2	.8	1.3	1.4
4.....	3.2	7.5	18.2	6.5	5.4	4.5	4.0	3.5	3.1	.8	1.6	1.4
5.....	3.1	7.6	19.9	6.3	5.7	4.2	4.5	3.4	2.9	.8	1.6	1.4
6.....	3.1	7.4	18.2	6.2	6.0	4.4	5.0	3.0	2.8	.8	1.3	1.6
7.....	3.3	6.9	13.4	6.0	6.5	4.6	5.0	3.2	2.8	.8	1.3	1.5
8.....	4.0	6.5	10.5	9.6	7.0	5.2	5.1	3.3	2.8	.9	1.2	1.4
9.....	10.9	6.4	9.2	10.7	8.2	5.1	5.5	3.3	2.5	.8	1.1	1.3
10.....	20.5	5.0	8.6	11.4	8.6	4.6	5.7	3.0	2.4	.9	1.2	1.3
11.....	28.5	4.0	8.1	13.0	9.0	4.2	5.1	3.0	2.3	1.0	1.3	1.4
12.....	32.1	3.3	7.5	12.5	8.8	3.8	4.4	2.9	2.4	1.0	1.7	1.5
13.....	31.2	4.2	7.8	10.4	8.9	3.6	3.8	3.2	2.5	1.0	2.1	1.8
14.....	28.3	*	8.0	8.8	9.5	2.5	3.4	2.9	2.4	1.0	2.4	1.9
15.....	19.5	4.3	8.7	7.9	9.0	3.4	3.2	2.8	2.3	.9	2.2	2.0
16.....	12.3	4.7	9.4	7.4	8.2	3.4	3.2	2.7	2.2	1.0	2.0	1.9
17.....	10.9	4.7	9.2	7.0	7.7	3.8	3.7	3.1	2.1	1.0	1.9	1.8
18.....	10.0	4.2	9.6	9.0	7.1	3.7	3.6	4.3	2.3	1.0	1.8	1.7
19.....	9.7	4.7	9.4	11.8	7.0	3.5	3.3	4.9	2.2	.9	1.7	1.6
20.....	9.1	4.6	8.9	11.8	7.2	3.2	3.0	5.7	2.0	.9	1.5	1.5
21.....	9.6	5.1	14.3	9.9	7.1	3.1	2.7	5.3	2.1	.8	1.3	1.6
22.....	10.2	5.6	20.6	8.6	6.7	3.2	2.7	6.1	1.9	.8	1.1	2.1
23.....	9.9	6.1	22.7	7.7	6.5	3.1	2.5	5.3	1.6	.7	1.3	3.3
24.....	9.1	6.7	22.0	7.1	5.8	3.0	2.4	4.8	1.4	.7	1.4	4.2
25.....	10.8	6.8	18.2	6.7	5.6	2.9	2.4	4.6	1.3	.7	1.3	4.6
26.....	10.8	6.5	13.0	6.3	5.6	2.9	2.9	4.7	1.3	.7	1.3	4.3
27.....	10.0	6.3	11.3	6.0	7.0	2.6	3.8	4.2	1.2	.7	1.3	4.2
28.....	9.3	6.3	10.6	6.0	7.5	2.5	10.2	3.7	1.1	.7	1.3	4.5
29.....	8.8	.....	9.5	5.9	7.4	2.5	10.4	3.5	1.0	.7	1.3	5.2
30.....	8.6	.....	8.9	5.9	6.7	2.6	7.4	3.7	0.9	.7	1.5	4.7
31.....	8.4	.....	8.4	.....	6.0	....	5.3	3.4	.....	1.0	.....	4.7

*Frozen.

Rating table for Tennessee River at Chattanooga, Tennessee.

[This table is applicable from Jan. 1, 1890, to Dec. 31, 1895.]

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.
0.7	16,360	11.0	66,850	22.5	133,665	34.0	293,820
0.8	16,560	11.5	69,755	23.0	136,570	34.5	302,720
0.9	16,780	12.0	72,660	23.5	139,475	35.0	311,620
1.0	17,000	12.5	75,565	24.0	142,380	35.5	320,520
1.5	18,160	13.0	78,470	24.5	145,285	36.0	329,420
2.0	19,500	13.5	81,375	25.0	148,190	36.5	338,320
2.5	21,100	14.0	84,280	25.5	151,095	37.0	347,220
3.0	23,000	14.5	87,185	26.0	154,000	37.5	356,120
3.5	25,090	15.0	90,090	26.5	162,500	38.0	365,020
4.0	27,300	15.5	92,995	27.0	171,000	38.5	373,920
4.5	29,660	16.0	95,900	27.5	179,900	39.0	382,820
5.0	32,200	16.5	98,805	28.0	188,800	39.5	391,720
5.5	34,895	17.0	101,710	28.5	197,700	40.0	400,620
6.0	37,800	17.5	104,615	29.0	206,600	40.5	409,520
6.5	40,705	18.0	107,520	29.5	215,500	41.0	418,420
7.0	43,610	18.5	110,425	30.0	224,400	41.5	427,320
7.5	46,515	19.0	113,330	30.5	233,300	42.0	436,220
8.0	49,420	19.5	116,235	31.0	242,200	42.5	445,120
8.5	52,325	20.0	119,140	31.5	251,100	43.0	454,020
9.0	55,230	20.5	122,045	32.0	260,000	43.5	462,920
9.5	58,135	21.0	124,950	32.5	268,900	44.0	471,820
10.0	61,040	21.5	127,855	33.0	276,020	44.5	480,720
10.5	63,945	22.0	130,760	33.5	284,920		

NOTE—This table applied to the foregoing “daily gage heights” gives the cubic feet per second flowing in the river on each date for which the gage height is given.

Daily gage height of Tennessee River at Chattanooga, Tenn., for 1896.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	4.9	4.4	4.1	14.8	3.4	2.6	3.3	5.5	2.4	2.5	1.2	2.4
2.....	5.0	6.2	3.9	27.7	3.4	3.0	3.2	5.2	2.1	2.3	1.2	2.5
3.....	4.9	10.0	3.8	34.4	3.4	4.4	3.1	4.8	1.9	2.6	1.3	2.5
4.....	4.9	11.6	3.7	38.8	3.5	5.7	3.2	4.6	1.8	3.0	1.5	2.6
5.....	4.7	10.5	3.6	40.5	4.0	5.2	3.3	4.5	1.6	2.7	1.5	2.6
6.....	4.3	9.3	3.5	36.9	4.6	4.7	3.2	4.9	1.6	2.6	1.6	2.7
7.....	3.6	11.8	3.4	23.3	4.6	4.1	3.6	5.0	1.5	2.1	2.3	2.9
8.....	3.3	14.0	3.5	11.6	4.3	3.5	5.0	4.2	2.0	1.7	3.5	3.0
9.....	3.2	13.8	3.5	9.0	4.0	3.5	3.9	3.8	2.8	1.5	4.2	2.8
10.....	3.2	13.2	3.4	8.0	3.7	4.5	14.2	3.4	2.7	1.4	4.1	2.8
11.....	3.1	12.8	3.6	7.2	3.4	7.0	21.1	3.3	2.4	1.2	3.3	2.7
12.....	3.1	11.4	3.6	6.7	3.1	6.3	21.6	3.4	2.0	1.2	3.2	2.6
13.....	2.9	10.1	3.8	6.2	2.9	5.1	15.6	3.2	1.8	1.2	5.8	2.4
14.....	2.7	11.1	3.8	5.8	2.8	4.3	11.5	3.2	1.6	1.2	7.3	2.6
15.....	2.6	12.8	3.7	5.5	2.7	3.6	11.2	3.1	1.6	1.5	6.5	4.1
16.....	2.4	13.6	3.8	5.2	2.6	3.2	11.4	3.0	1.5	1.7	5.5	6.5
17.....	2.3	12.5	5.5	5.0	2.5	3.0	11.0	3.0	1.3	1.6	4.9	6.6
18.....	2.3	11.0	10.1	4.8	2.4	2.8	13.9	2.9	1.4	1.6	4.3	6.3
19.....	2.2	9.0	13.1	4.2	2.4	2.9	12.5	2.7	1.4	1.7	3.8	6.4
20.....	2.3	7.6	15.7	4.4	2.2	3.1	9.6	2.6	1.3	1.6	3.4	6.8
21.....	2.3	6.7	13.8	4.2	2.1	3.7	7.6	2.4	1.2	1.6	3.0	7.0
22.....	2.5	6.0	11.2	4.1	2.1	3.5	6.5	2.4	1.2	1.4	2.8	7.2
23.....	3.1	5.4	9.5	4.1	2.5	3.5	8.5	2.2	1.3	1.2	2.5	7.3
24.....	5.0	4.9	8.4	4.0	3.2	3.3	8.8	2.2	1.4	1.2	2.4	7.0
25.....	6.5	4.7	7.9	4.0	3.6	3.1	8.6	2.8	1.6	1.2	2.3	6.6
26.....	8.2	4.6	7.5	3.8	3.8	2.9	7.8	2.6	2.0	1.2	2.2	5.9
27.....	8.0	4.5	7.2	3.8	3.2	2.6	11.1	2.7	1.7	1.2	2.1	5.8
28.....	7.0	4.4	6.7	3.8	3.1	2.6	12.2	3.2	1.5	1.2	2.2	4.8
29.....	6.0	4.2	6.2	3.6	2.8	2.8	9.3	4.0	1.5	1.1	5.3	4.4
30.....	5.3	.....	5.8	3.6	2.7	3.0	7.2	3.6	2.7	1.1	9.4	3.7
31.....	4.8	.....	7.7	.....	2.5	....	6.2	2.8	.....	1.3	.....	3.0

The following discharge measurements were made by Max Hall and others during 1897:

May 8—Gage height, 7.07 feet; discharge, 44,187 second-feet.
 May 28—Gage height, 4.52 feet; discharge, 25,892 second-feet.
 June 29—Gage height, 5.76 feet; discharge, 32,943 second-feet.
 July 13—Gage height, 4.59 feet; discharge, 26,884 second-feet.
 Sept. 7—Gage height, 1.67 feet; discharge, 10,313 second-feet.
 Oct. 6—Gage height, 0.48 feet; discharge, 5,969 second-feet.
 Nov. 16—Gage height, 0.83 feet; discharge, 5,552 second-feet.
 Dec. 23—Gage height, 10.30 feet; discharge, 67,000 second-feet.

Daily gage height of Tennessee River at Chattanooga, Tenn., for 1897.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	2.4	3.0	12.5	8.7	5.9	4.3	5.0	4.4	2.1	0.8	0.8	1.0
2.....	2.5	7.0	9.6	12.2	6.3	4.2	4.0	3.9	2.2	.8	.9	1.2
3.....	2.8	10.1	8.6	15.0	7.4	4.1	3.8	3.8	1.9	.7	1.0	1.3
4.....	2.6	10.5	9.0	16.0	9.6	4.1	3.4	3.6	1.8	.6	1.2	2.0
5.....	2.6	9.4	9.5	26.0	9.6	4.1	3.4	3.3	1.8	.5	1.2	3.3
6.....	2.7	8.3	12.1	30.4	8.5	4.1	4.0	3.5	1.7	.5	1.3	3.8
7.....	2.9	8.8	19.2	29.7	7.7	4.4	3.8	4.4	1.7	.5	1.4	3.9
8.....	3.0	10.7	25.1	25.4	7.2	4.4	3.8	4.2	1.6	.4	1.2	3.5
9.....	2.8	14.1	24.2	20.0	6.6	4.0	4.4	4.2	1.6	.4	1.2	2.9
10.....	2.8	15.5	21.3	16.0	6.2	5.2	4.0	5.6	1.4	.4	1.2	2.6
11.....	2.7	13.2	22.3	14.0	6.0	5.0	4.1	5.2	1.3	.5	1.1	2.4
12.....	2.6	10.8	28.4	26.0	6.2	5.7	4.5	4.6	1.2	.6	1.0	2.1
13.....	2.4	9.9	34.9	11.4	7.8	5.0	4.6	4.1	1.2	.9	1.0	1.8
14.....	2.6	10.0	37.9	10.3	18.4	4.3	4.2	3.5	1.1	1.4	.9	1.8
15.....	4.1	10.5	37.9	9.7	22.4	3.9	3.8	3.1	1.0	1.1	.8	2.5
16.....	6.5	10.7	37.0	9.8	20.3	3.6	3.6	2.8	1.0	1.2	.8	2.7
17.....	6.6	9.8	36.0	10.2	16.5	3.7	4.5	2.0	.9	1.2	.8	2.5
18.....	6.3	8.6	33.8	9.9	11.9	3.6	6.3	3.0	.8	1.1	.8	2.5
19.....	.64	7.6	29.6	9.3	9.1	3.3	6.1	3.4	.8	1.4	.7	2.6
20.....	6.8	7.0	29.6	8.8	7.7	3.2	5.6	3.0	.8	1.1	.8	2.7
21.....	7.0	7.0	32.4	8.1	6.9	4.1	6.7	3.0	.9	2.0	.7	3.4
22.....	7.2	8.3	33.3	7.5	6.4	5.0	6.1	3.4	.9	1.9	.7	4.5
23.....	7.3	13.2	30.9	7.0	5.9	4.8	5.8	3.1	.8	1.6	.7	10.2
24.....	7.0	25.2	25.0	6.7	5.6	5.3	6.0	3.8	.9	1.4	.7	9.3
25.....	6.6	31.6	18.1	6.4	5.3	5.5	8.4	3.4	.8	1.6	.7	7.7
26.....	5.9	34.8	14.2	6.2	5.1	6.2	9.7	2.9	.8	1.4	.7	6.4
27.....	5.3	33.8	12.2	6.0	4.8	5.4	13.3	2.8	.7	1.2	.7	5.6
28.....	4.8	23.6	10.8	6.1	4.6	5.5	8.7	2.8	.7	1.0	.7	5.0
29.....	4.4	.....	9.8	6.2	4.4	6.2	6.7	2.5	.7	.5	.7	4.5
30.....	3.7	.....	9.1	5.8	4.2	5.2	5.6	2.2	.8	.8	.9	4.0
31.....	3.0	.....	8.6	.....	4.2	.....	5.0	2.1	.....	.8	.....	3.8

Rating table for Tennessee River at Chattanooga, Tennessee, for (a) 1896-1897.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second ft.	Feet	Second ft.	Feet	Second ft	Feet.	Second ft.
0.2	3,080	1.4	10,208	3.4	22,088	12.0	73,172
0.3	3,674	1.6	11,396	3.6	23,276	13.0	79,112
0.4	4,268	1.8	12,584	3.8	24,464	14.0	85,052
0.5	4,862	2.0	13,772	4.0	25,652	15.0	90,992
0.6	5,456	2.2	14,960	4.4	28,028	16.0	96,932
0.7	6,050	2.4	16,148	4.8	30,404	18.0	108,812
0.8	6,644	2.6	17,336	6.0	37,532	20.0	120,690
0.9	7,238	2.8	18,524	8.0	49,412	22.0	132,570
1.0	7,832	3.0	19,712	10.0	61,292	24.0	144,450
1.2	9,020	3.2	20,900	11.0	67,232	26.0	156,330

a Above 26 feet use table as published in the Eighteenth Ann. Rept., Part IV, p. 120.

NOTE—This table applied to the foregoing "daily gage heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.

The following discharge measurements were made on the Tennessee River at Chattanooga, Tenn., by Max Hall and others during 1898:

May 10—Gage height, 4.14 feet; discharge, 22,066 second-feet.
 July 29—Gage height, 5.30 feet; discharge, 29,693 second-feet.
 August 19—Gage height, 6.37 feet; discharge, 36,671 second-feet.
 Oct. 6—Gage height, 17.60 feet; discharge, 120,359 second-feet.
 Oct. 28—Gage height, 6.00 feet; discharge, 35,953 second-feet.
 Nov. 29—Gage height, 4.75 feet; discharge, 29,569 second-feet.
 Nov. 29—Gage height, 4.70 feet; discharge, 31,340 second-feet.

Daily gage height, in feet, of Tennessee River at Chattanooga, Tenn., for 1898.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	3.45	7.55	3.30	17.45	6.40	3.35	2.45	8.15	3.55	3.55	4.60	5.10
2.....	3.25	6.70	3.15	17.80	5.80	3.30	2.35	7.55	3.95	3.30	4.30	5.05
3.....	3.05	6.15	3.00	15.00	5.40	3.30	2.25	6.45	9.15	3.20	4.25	4.90
4.....	2.90	5.40	2.95	11.45	5.05	3.30	2.05	5.35	18.50	3.90	4.05	5.00
5.....	2.75	5.00	3.30	10.35	4.70	2.85	2.35	6.25	25.00	8.90	3.90	5.05
6.....	2.65	4.55	3.45	12.15	4.45	2.55	2.10	11.85	22.15	16.90	3.90	5.60
7.....	2.70	4.45	3.50	11.60	4.35	2.35	2.10	14.65	15.70	16.50	4.25	5.95
8.....	2.80	4.35	3.40	10.30	4.10	2.20	2.15	12.55	11.25	10.75	4.45	5.90
9.....	3.05	4.30	3.25	9.30	4.20	2.05	2.60	10.15	9.50	8.80	4.50	5.85
10.....	3.25	4.15	3.05	8.30	4.15	1.95	3.05	8.50	8.60	8.40	4.45	5.55
11.....	3.25	4.00	2.90	8.60	4.45	1.80	3.50	9.05	7.45	7.55	4.65	5.10
12.....	5.50	3.90	2.85	9.50	4.65	1.95	3.40	12.30	6.45	6.55	5.05	4.75
13.....	13.20	3.80	2.80	9.49	1.40	1.40	3.20	14.85	5.70	6.00	5.30	4.55
14.....	14.40	3.80	2.85	9.00	4.15	1.75	2.80	15.85	5.20	5.70	4.95	4.30
15.....	12.25	3.80	3.15	3.05	3.95	1.45	2.85	14.95	4.80	5.35	4.65	4.00
16.....	12.20	3.70	5.10	9.15	3.90	1.75	3.50	11.60	4.45	4.90	4.40	3.85
17.....	12.35	3.55	5.05	8.60	3.80	2.00	4.55	8.90	4.25	4.70	4.55	3.70
18.....	10.00	3.50	5.20	3.20	3.70	2.35	5.35	7.10	3.95	5.25	4.75	3.60
19.....	9.20	3.30	5.50	8.00	3.70	3.50	4.60	6.40	3.75	6.70	4.90	3.75
20.....	11.70	3.30	6.10	7.95	3.65	4.05	4.15	6.05	3.65	7.75	5.30	5.20
21.....	12.80	3.20	5.70	7.40	3.90	5.35	4.00	5.95	3.45	9.30	5.85	5.85
22.....	13.40	3.25	5.45	7.05	3.90	5.55	3.30	5.65	3.55	8.80	6.05	6.00
23.....	12.55	3.40	5.15	6.60	3.50	5.05	3.30	5.40	5.00	7.65	6.55	5.85
24.....	12.35	3.50	4.65	6.55	3.40	4.55	3.40	4.75	5.05	7.25	6.85	5.35
25.....	12.35	3.60	4.30	6.55	3.45	3.70	3.55	4.30	6.40	7.20	6.55	5.20
26.....	16.05	3.80	4.15	6.30	3.70	3.40	3.55	4.05	7.20	7.60	6.10	5.40
27.....	18.20	3.50	4.45	6.45	4.95	2.90	4.55	4.00	6.15	6.90	5.65	5.90
28.....	16.70	3.35	4.45	7.19	5.60	2.80	5.55	4.10	5.00	6.20	5.15	5.70
29.....	14.15	.....	4.65	7.05	4.99	2.90	5.35	4.00	4.30	5.65	4.80	5.15
30.....	11.20	.....	5.55	6.75	4.20	2.55	5.90	4.10	3.85	5.15	4.95	4.80
31.....	8.95	.....	13.25	.....	3.70	.....	7.90	3.85	.....	4.85	.....	4.50

Rating table for Tennessee River at Chattanooga, Tenn., for 1898.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second ft.	Feet.	Second feet.	Feet.	Second feet.	Feet.	Second feet.
0.5	5,900	3.7	19,550	6.9	42,370	10.5	68,650
0.6	6,266	3.8	20,120	7.0	43,100	11.0	72,300
0.7	6,634	3.9	20,700	7.1	43,830	11.5	75,950
0.8	7,004	4.0	21,320	7.2	44,560	12.0	79,600
0.9	7,376	4.1	21,950	7.3	45,290	12.5	83,250
1.0	7,750	4.2	22,580	7.4	46,020	13.0	86,900
1.1	8,126	4.3	23,350	7.5	46,750	13.5	90,550
1.2	8,504	4.4	24,120	7.6	47,480	14.0	94,200
1.3	8,884	4.5	24,850	7.7	48,210	14.5	97,850
1.4	9,266	4.6	25,580	7.8	48,940	15.0	101,500
1.5	9,650	4.7	26,310	7.9	49,670	15.5	105,150
1.6	10,046	4.8	27,040	8.0	50,400	16.0	108,800
1.7	10,444	4.9	27,770	8.1	51,130	16.5	112,450
1.8	10,844	5.0	28,500	8.2	51,860	17.0	116,100
1.9	11,246	5.1	29,230	8.3	52,590	17.5	119,750
2.0	11,650	5.2	29,960	8.4	53,320	18.0	123,400
2.1	12,056	5.3	30,690	8.5	54,050	18.5	127,050
2.2	12,464	5.4	31,420	8.6	54,780	19.0	130,700
2.3	12,874	5.5	32,150	8.7	55,510	19.5	134,350
2.4	13,286	5.6	32,880	8.8	56,240	20.0	138,000
2.5	13,700	5.7	33,610	8.9	56,970	20.5	141,650
2.6	14,126	5.8	34,340	9.0	57,700	21.0	145,300
2.7	14,562	5.9	35,070	9.1	58,430	21.5	148,950
2.8	15,008	6.0	35,800	9.2	59,160	22.0	152,600
2.9	15,464	6.1	36,530	9.3	59,890	22.5	156,250
3.0	15,930	6.2	37,260	9.4	60,620	23.0	159,900
3.1	16,410	6.3	37,990	9.5	61,350	23.5	163,550
3.2	16,900	6.4	38,720	9.6	62,080	24.0	167,200
3.3	17,400	6.5	39,450	9.7	62,810	24.6	171,680
3.4	17,920	6.6	40,180	9.8	63,540		
3.5	18,460	6.7	40,910	9.9	64,270		
3.6	19,000	6.8	41,640	10.0	65,000		

NOTE—This table applied to the foregoing “daily gage heights” gives the cubic feet per second flowing in the river on each date for which the gage height is given.

The following measurements were made by Max Hall and others during 1899:

May 3—Gage height, 6.71 feet; discharge, 37,770 second-feet.

May 26—Gage height, 4.76 feet; discharge, 25,526 second-feet.

June 21—Gage height, 4.15 feet; discharge, 21,391 second-feet.

Sept. 15—Gage height, 1.90 feet; discharge, 10,819 second-feet.

Oct. 27—Gage height, 0.80 foot; discharge, 6,566 second-feet.

Daily gage height in feet of Tennessee River at Chattanooga, Tenn., for 1899.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	4.75	5.70	19.25	22.80	7.60	4.15	3.45	4.20	2.20	1.20	1.10	1.70
2.....	4.95	5.65	17.60	19.50	7.10	4.25	3.30	3.55	2.35	1.10	1.10	1.70
3.....	5.30	5.60	15.15	14.90	6.70	4.40	3.05	3.05	2.80	1.05	1.05	1.70
4.....	5.80	10.70	14.15	12.95	6.30	4.85	2.80	2.75	3.05	.95	1.10	1.70
5.....	5.95	23.10	17.95	13.25	6.15	4.65	2.60	2.45	2.65	.90	1.50	1.80
6.....	7.25	30.45	24.50	14.70	7.10	4.25	2.60	2.45	2.25	.80	1.50	1.70
7.....	18.80	34.30	26.65	15.70	8.50	4.65	2.65	2.40	1.95	.85	1.50	1.60
8.....	18.40	36.95	27.60	18.05	9.35	3.75	3.05	2.40	1.80	1.00	1.45	1.50
9.....	17.35	38.25	27.70	17.75	10.00	3.65	2.90	2.25	1.60	1.15	1.35	1.40
10.....	17.15	36.75	16.15	15.70	10.70	3.40	2.60	2.10	1.80	1.60	1.20	1.40
11.....	13.85	30.30	11.85	14.20	11.15	3.90	2.60	2.10	1.70	1.80	1.15	1.60
12.....	10.50	19.35	10.60	12.90	10.40	4.30	2.45	2.00	2.00	1.85	1.10	5.20
13.....	9.15	12.15	9.55	11.65	9.60	5.25	2.30	2.00	1.80	1.70	1.00	6.45
14.....	8.10	9.50	11.20	10.70	9.30	5.80	2.20	2.25	2.00	1.65	1.00	7.40
15.....	7.65	8.50	24.55	10.00	9.55	6.45	2.15	2.65	1.85	1.40	1.00	7.15
16.....	7.30	7.55	34.25	9.40	9.20	6.10	1.95	2.65	1.65	1.25	1.00	6.20
17.....	7.40	7.95	36.90	8.75	8.70	6.40	1.90	2.40	1.45	1.15	1.00	5.20
18.....	7.45	9.55	36.15	8.40	7.75	6.20	1.80	2.30	1.35	1.15	1.00	4.25
19.....	7.25	11.30	35.85	8.00	6.90	5.25	1.90	2.15	1.20	1.10	1.00	3.85
20.....	7.00	12.65	37.05	7.55	6.40	4.70	2.05	1.90	1.05	1.10	.95	4.25
21.....	6.80	11.50	39.20	7.35	5.90	4.20	2.05	1.70	1.00	1.10	.85	4.40
22.....	6.45	10.65	40.00	7.05	5.60	3.75	2.40	1.60	1.05	1.10	.85	4.40
23.....	5.90	10.10	38.70	7.85	5.35	3.50	2.70	1.45	1.30	1.05	1.00	4.15
24.....	5.65	9.75	32.70	9.65	5.30	3.25	3.50	1.30	1.50	1.00	1.15	5.65
25.....	6.05	9.50	23.15	9.35	5.05	3.15	3.40	1.20	1.50	.95	1.30	6.15
26.....	6.35	9.20	16.30	10.75	4.80	3.00	3.00	1.20	1.45	.85	1.70	6.30
27.....	5.85	13.20	13.65	10.30	4.65	3.25	3.05	1.20	1.30	.80	1.80	5.85
28.....	5.75	18.45	13.95	9.20	4.40	3.65	3.65	1.25	1.20	.80	1.85	5.55
29.....	5.55	.....	17.30	8.35	4.30	3.60	4.25	1.60	1.25	.90	1.80	5.10
30.....	5.30	.....	21.20	7.75	4.20	3.30	4.25	1.85	1.30	1.00	1.75	4.65
31.....	6.30	.....	22.80	.....	4.25	.....	5.15	1.75	.....	1.05	.....	3.85

During 1900 the following measurements were made by Max Hall and others:

March 13—Gage height, 11.25 feet; discharge, 66,012 second-feet.

July 27—Gage height, 3.45 feet; discharge, 18,470 second-feet.

*Daily gage height in feet of Tennessee River at Chattanooga, Tenn.,
for 1900.*

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	3.05	3.25	8.05	7.85	6.20	2.85	8.85	6.20	2.10	2.00	2.90	8.70
2.....	*	2.95	8.70	7.20	5.65	2.80	8.15	5.40	2.00	1.80	2.60	6.50
3.....	*	2.60	10.90	6.85	5.35	3.00	6.95	4.70	2.30	1.70	2.50	5.60
4.....	*	2.50	12.50	7.25	5.15	3.20	6.30	4.20	2.50	1.50	2.90	5.10
5.....	*	2.90	12.75	8.05	4.95	3.20	5.80	3.60	2.30	1.40	3.30	5.60
6.....	2.10	3.50	10.65	8.55	4.80	3.50	5.40	3.20	2.00	1.30	3.70	6.90
7.....	2.20	3.95	10.00	7.85	4.65	5.65	5.00	2.90	1.70	1.30	4.20	8.30
8.....	2.30	3.90	11.65	7.05	4.45	6.65	4.50	2.60	1.60	1.60	4.20	9.20
9.....	2.35	5.35	14.55	6.50	4.45	6.15	4.20	2.40	1.40	1.80	3.70	8.50
10.....	2.45	8.40	16.50	6.10	4.35	5.30	4.20	2.30	1.30	2.10	3.20	7.00
11.....	3.35	9.40	16.15	6.50	4.30	5.00	4.30	2.10	1.20	2.10	3.00	6.10
12.....	6.05	8.95	14.25	7.50	4.30	4.90	3.80	2.00	1.10	2.50	2.70	5.40
13.....	8.15	13.90	11.65	7.40	4.15	4.50	3.40	1.90	1.00	3.00	2.50	4.90
14.....	8.70	21.55	9.85	7.00	4.00	5.20	3.30	1.90	1.10	2.50	2.30	4.50
15.....	8.45	24.00	8.65	6.50	3.85	5.30	3.30	2.10	1.80	1.90	2.20	4.30
16.....	7.80	21.40	8.00	6.30	3.75	5.25	3.30	2.20	3.10	1.80	2.10	4.20
17.....	6.35	17.00	7.80	8.75	3.60	5.45	3.20	2.30	4.00	1.60	2.00	4.00
18.....	5.50	12.05	7.55	10.65	3.50	6.15	3.10	2.30	4.10	1.50	2.00	3.60
19.....	5.80	9.25	7.55	9.75	3.40	8.85	3.00	2.30	4.60	1.40	1.90	3.40
20.....	8.50	7.70	8.55	9.40	3.40	9.20	2.90	2.20	4.70	1.30	1.90	3.30
21.....	9.40	7.10	11.60	11.70	3.25	8.90	2.70	1.90	3.90	1.20	2.10	3.30
22.....	8.85	7.70	14.95	12.00	3.15	7.65	2.50	1.80	3.00	1.20	2.20	4.00
23.....	7.95	8.50	17.40	11.35	3.05	6.40	2.50	1.70	2.60	1.40	2.30	4.20
24.....	7.20	8.55	16.45	10.70	3.00	6.25	2.80	1.80	2.40	2.20	2.80	4.70
25.....	6.15	8.55	12.65	9.75	3.15	7.15	3.00	1.90	2.70	4.10	3.20	5.20
26.....	5.50	9.50	11.15	8.50	3.20	7.60	3.10	2.50	2.70	7.00	7.80	5.40
27.....	5.00	9.30	10.90	7.80	3.35	8.05	3.30	3.10	2.60	7.50	13.90	5.20
28.....	4.65	8.45	10.70	7.45	3.60	8.20	4.60	2.70	2.40	6.00	15.60	4.60
29.....	4.20	.....	10.20	7.05	3.60	8.60	8.00	2.50	2.30	4.90	15.60	4.30
30.....	3.90	.....	9.35	6.60	3.35	8.70	8.20	2.30	2.20	3.70	13.20	4.00
31.....	3.55	.....	8.50	.....	3.05	.....	7.30	2.20	.....	3.40	.....	4.50

*Frozen at gage.

Rating table for Tennessee River at Chattanooga, Tennessee, for 1899-1900.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.
0.8	6,600	10.7	62,340	20.6	123,720	30.5	185,100
0.9	6,950	10.8	62,960	20.7	124,340	30.6	185,720
1.0	7,300	10.9	63,580	20.8	124,960	30.7	186,340
1.1	7,670	11.0	64,200	20.9	125,580	30.8	186,960
1.2	8,040	11.1	64,820	21.0	126,200	30.9	187,580
1.3	8,430	11.2	65,440	21.1	126,820	31.0	188,200
1.4	8,820	11.3	66,060	21.2	127,440	31.1	188,820
1.5	9,220	11.4	66,680	21.3	128,060	31.2	189,440
1.6	9,620	11.5	67,300	21.4	128,680	31.3	190,060
1.7	10,020	11.6	67,920	21.5	129,300	31.4	190,680
1.8	10,430	11.7	68,540	21.6	129,920	31.5	191,300
1.9	10,840	11.8	69,160	21.7	130,540	31.6	191,920
2.0	11,250	11.9	69,780	21.8	131,160	31.7	192,540
2.1	11,660	12.0	70,400	21.9	131,780	31.8	193,160
2.2	12,080	12.1	71,020	22.0	132,400	31.9	193,780
2.3	12,500	12.2	71,640	22.1	133,020	32.0	194,400
2.4	12,930	12.3	72,260	22.2	133,640	32.1	195,020
2.5	13,360	12.4	72,880	22.3	134,260	32.2	195,640
2.6	13,800	12.5	73,500	22.4	134,880	32.3	196,260
2.7	14,240	12.6	74,120	22.5	135,500	32.4	196,880
2.8	14,680	12.7	74,740	22.6	136,120	32.5	197,500
2.9	15,140	12.8	75,360	22.7	136,740	32.6	198,120
3.0	15,600	12.9	75,980	22.8	137,360	32.7	198,740
3.1	16,080	13.0	76,600	22.9	137,980	32.8	199,360
3.2	16,550	13.1	77,220	23.0	138,600	32.9	199,980
3.3	17,050	13.2	77,840	23.1	139,220	33.0	200,600
3.4	17,550	13.3	78,460	23.2	139,840	33.1	201,220
3.5	18,050	13.4	79,080	23.3	140,460	33.2	201,840
3.6	18,550	13.5	79,700	23.4	141,080	33.3	202,460
3.7	19,050	13.6	80,320	23.5	141,700	33.4	203,080
3.8	19,600	13.7	80,940	23.6	142,320	33.5	203,700
3.9	20,200	13.8	81,560	23.7	142,940	33.6	204,320
4.0	20,800	13.9	82,180	23.8	143,560	33.7	204,940
4.1	21,420	14.0	82,800	23.9	144,180	33.8	205,560
4.2	22,040	14.1	83,420	24.0	144,800	33.9	206,180
4.3	22,660	14.2	84,040	24.1	145,420	34.0	206,800
4.4	23,280	14.3	84,660	24.2	146,040	34.1	207,420
4.5	23,900	14.4	85,280	24.3	146,660	34.2	208,040
4.6	24,520	14.5	85,900	24.4	147,280	34.3	208,660
4.7	25,140	14.6	86,520	24.5	147,900	34.4	209,280
4.8	25,760	14.7	87,140	24.6	148,520	34.5	209,900
4.9	26,380	14.8	87,760	24.7	149,140	34.6	210,520
5.0	27,000	14.9	88,380	24.8	149,760	34.7	211,140
5.1	27,620	15.0	89,000	24.9	150,380	34.8	211,760
5.2	28,240	15.1	89,620	25.0	151,000	34.9	212,380
5.3	28,860	15.2	90,240	25.1	151,620	35.0	213,000
5.4	29,480	15.3	90,860	25.2	152,240	35.1	213,620
5.5	30,100	15.4	91,480	25.3	152,860	35.2	214,240
5.6	30,720	15.5	92,100	25.4	153,480	35.3	214,860

Rating table for Tennessee River at Chattanooga, Tennessee, for 1899-1900.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.
5.7	31,340	15.6	92,720	25.5	154,100	35.4	215,480
5.8	31,960	15.7	93,340	25.6	154,720	35.5	216,100
5.9	32,580	15.8	93,960	25.7	155,340	35.6	216,720
6.0	33,200	15.9	94,580	25.8	155,960	35.7	207,340
6.1	33,820	16.0	95,200	25.9	156,580	35.8	217,960
6.2	34,440	16.1	95,820	26.0	157,200	35.9	218,580
6.3	35,060	16.2	96,440	26.1	159,820	36.0	219,200
6.4	35,680	16.3	97,060	26.2	158,440	36.1	219,820
6.5	36,300	16.4	97,680	26.3	159,060	36.2	220,440
6.6	36,920	16.5	98,300	26.4	159,680	36.3	221,060
6.7	37,540	16.6	98,920	26.5	160,300	36.4	221,680
6.8	38,160	16.7	99,540	26.6	160,920	36.5	222,300
6.9	38,780	16.8	100,160	26.7	161,540	36.6	222,920
7.0	39,400	16.9	100,780	26.8	162,160	36.7	223,540
7.1	40,020	17.0	101,400	26.9	162,780	36.8	224,160
7.2	40,640	17.1	102,020	27.0	163,400	36.9	224,780
7.3	41,260	17.2	102,640	27.1	164,020	37.0	225,400
7.4	41,880	17.3	103,260	27.2	164,640	37.1	226,020
7.5	42,500	17.4	103,880	27.3	165,260	37.2	226,640
7.6	43,120	17.5	104,500	27.4	165,880	37.3	227,260
7.7	43,740	17.6	105,120	27.5	166,500	37.4	227,880
7.8	44,360	17.7	105,740	27.6	167,120	37.5	228,500
7.9	44,980	17.8	106,360	27.7	167,740	37.6	229,120
8.0	45,600	17.9	106,980	27.8	168,360	37.7	229,740
8.1	46,220	18.0	107,600	27.9	168,980	37.8	230,360
8.2	46,840	18.1	108,220	28.0	169,600	37.9	230,980
8.3	47,460	18.2	108,840	28.1	170,220	18.0	231,600
8.4	48,080	18.3	109,460	28.2	170,840	38.1	232,220
8.5	48,700	18.4	110,080	28.3	171,460	38.2	232,840
8.6	49,320	18.5	110,700	28.4	172,080	38.3	233,460
8.7	49,940	18.6	111,320	28.5	172,700	38.4	234,080
8.8	50,560	18.7	111,940	28.6	173,320	38.5	234,700
8.9	51,180	18.8	112,560	28.7	173,940	38.6	235,320
9.0	51,800	18.9	113,180	28.8	174,560	38.7	235,940
9.1	52,420	19.0	113,800	28.9	175,180	38.8	236,560
9.2	53,040	19.1	114,420	29.0	175,800	38.9	237,180
9.3	53,660	19.2	115,040	29.1	176,420	39.0	237,800
9.4	54,280	19.3	115,660	29.2	177,040	39.1	238,420
9.5	54,900	19.4	116,280	29.3	177,660	39.2	239,040
9.6	55,520	19.5	116,900	29.4	178,280	39.3	239,660
9.7	56,140	19.6	117,520	29.5	178,900	39.4	240,280
9.8	56,760	19.7	118,140	29.6	179,520	39.5	240,900
9.9	57,380	19.8	118,760	29.7	180,140	39.6	241,520
10.0	58,000	19.9	119,380	29.8	180,760	39.7	242,140
10.1	58,620	20.0	120,000	29.9	181,380	39.8	242,760
10.2	59,240	20.1	120,620	30.0	182,000	39.9	243,380
10.3	59,860	20.2	121,240	30.1	182,620	40.0	244,000

Gage height.	Discharge.		Gage height.	Discharge.		Gage height.	Discharge.		Gage height.	Discharge.	
	Feet.	Second ft.		Feet.	Second ft.		Feet.	Second ft.		Feet.	Second ft.
10.4	60,480		20.3	121,860		30.2	183,240				
10.5	61,100		20.4	122,480		30.3	183,860				
10.6	61,720		20.5	123,100		30.4	184,480				

NOTE—This table applied to the foregoing "daily gage heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.

The following discharge measurements were made on the Tennessee River at Chattanooga, Tenn., during 1901:

1901.

Jan. 24—Hydrographer, Max Hall: Gage height, 5.60 feet; discharge, 30,317 second-feet.

April 4—Hydrographer, K. T. Thomas: Gage height, 24.20 feet; discharge, 155,457 second-feet.

July 31—Hydrographer, K. T. Thomas: Gage height, 2.80 feet; discharge, 15,393 second-feet.

Aug. 18—Hydrographer, K. T. Thomas: Gage height, 31.70 feet; discharge, 198,718 second-feet.

Daily gage height of Tennessee River at Chattanooga, Tenn., for 1901.

Day	Jan.	Feb.	Mar.	April	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec
1.....	5.2	6.5	3.7	12.4	10.8	12.0	6.0	2.8	9.9	4.2	2.6	2.3
2.....	5.7	6.7	3.7	13.2	9.3	11.1	5.9	2.8	9.8	4.5	2.6	2.2
3.....	5.8	7.2	3.7	19.7	8.5	9.8	6.3	2.9	9.7	4.6	2.5	2.3
4.....	5.6	8.7	3.7	24.1	7.6	8.5	6.4	2.8	10.3	4.5	2.5	2.5
5.....	5.1	10.1	3.8	23.9	7.0	7.7	6.0	2.6	9.4	4.4	2.5	2.5
6.....	4.7	10.0	4.0	22.4	6.7	6.9	5.2	2.6	7.9	4.8	2.5	2.5
7.....	4.4	9.4	4.1	18.9	6.4	6.9	5.1	3.2	6.9	4.5	2.4	3.0
8.....	4.1	8.9	4.1	14.2	6.2	6.9	5.4	9.1	6.4	4.1	2.4	3.2
9.....	3.9	8.5	4.0	11.8	5.9	6.5	5.6	12.2	5.9	3.9	2.4	3.2
10.....	3.8	7.7	7.0	10.3	5.6	6.9	6.3	9.9	5.5	3.7	2.4	3.5
11.....	6.1	7.6	9.8	9.2	5.6	8.2	6.6	7.3	5.3	3.4	2.4	3.5
12.....	15.4	7.0	11.2	8.4	5.4	7.4	5.6	5.8	5.1	3.4	2.4	4.0
13.....	26.6	7.1	9.7	7.9	5.6	6.4	5.0	5.3	5.7	3.5	2.5	4.1
14.....	28.1	7.2	8.2	6.8	5.5	6.1	4.4	6.5	5.9	4.0	2.5	4.7
15.....	25.3	7.0	7.3	9.8	5.5	6.4	4.1	14.0	6.0	4.3	2.5	17.9
16.....	19.5	6.4	6.4	10.3	5.4	7.5	3.6	27.3	6.1	4.1	2.5	26.8
17.....	12.7	5.8	5.8	10.2	5.2	8.9	3.7	32.8	6.3	4.1	2.4	28.8
18.....	9.7	5.3	5.4	9.6	4.9	9.8	3.9	32.6	8.8	4.0	2.4	26.7
19.....	8.1	5.1	5.0	10.8	5.3	9.3	3.7	28.6	9.9	3.7	2.3	19.9
20.....	7.2	5.0	4.7	21.1	8.0	8.9	3.7	23.4	9.3	3.3	2.3	11.4
21.....	6.4	4.9	4.7	26.5	10.2	8.4	4.2	18.6	8.3	3.1	2.2	8.3
22.....	5.9	4.7	4.8	24.7	20.2	7.7	3.9	17.0	7.4	3.1	2.1	6.6
23.....	5.4	4.5	5.2	23.0	26.5	10.1	3.7	16.5	6.4	3.1	2.2	5.7
24.....	5.6	4.4	5.0	22.2	29.7	9.5	3.5	18.5	5.6	3.0	2.5	5.8
25.....	5.8	4.2	5.0	19.0	32.4	7.6	3.1	16.5	5.2	3.0	2.5	6.9
26.....	5.8	4.1	7.7	17.1	32.5	9.6	3.0	13.1	4.9	2.9	2.5	7.9
27.....	5.4	3.8	15.9	14.9	23.5	9.8	2.9	11.0	4.6	2.8	2.6	10.2
28.....	5.2	3.7	22.3	14.9	13.5	8.4	2.9	10.3	4.4	2.7	2.5	16.0
29.....	5.2	.....	21.7	14.5	12.1	7.2	2.8	10.7	4.4	2.6	2.5	24.0
30.....	5.2	.....	18.4	13.8	11.9	6.4	2.8	10.0	4.3	2.5	2.4	32.0
31.....	5.5	.....	14.7	.....	12.3	.....	2.8	9.8	.....	2.5	.....	37.4

Rating table of Tennessee River at Chattanooga, Tennessee, for 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.	Feet.	Second ft.
2.0	11,250	11.6	69,600	21.2	132,000	30.8	194,400
2.1	11,660	11.7	70,250	21.3	132,650	30.9	195,050
2.2	12,080	11.8	70,900	21.4	133,300	31.0	195,700
2.3	12,500	11.9	71,550	21.5	133,950	31.1	196,350
2.4	12,930	12.0	72,200	21.6	134,600	31.2	197,000
2.5	13,360	12.1	72,850	21.7	135,250	31.3	197,650
2.6	13,800	12.2	73,500	21.8	135,900	31.4	198,300
2.7	14,240	12.3	74,150	21.9	136,550	31.5	198,950
2.8	14,680	12.4	74,800	22.0	137,200	31.6	199,600
2.9	15,140	12.5	75,450	22.1	137,850	31.7	200,250
3.0	15,600	12.6	76,100	22.2	138,500	31.8	200,900
3.1	16,080	12.7	76,750	22.3	139,150	31.9	201,550
3.2	16,550	12.8	77,400	22.4	139,800	32.0	202,200
3.3	17,050	12.9	78,050	22.5	140,450	32.1	202,850
3.4	17,550	13.0	78,700	22.6	141,100	32.2	203,500
3.5	18,050	13.1	79,350	22.7	141,750	32.3	204,150
3.6	18,550	13.2	80,000	22.8	142,400	32.4	204,800
3.7	19,050	13.3	80,650	22.9	143,050	32.5	205,450
3.8	19,600	13.4	81,300	23.0	143,700	32.6	206,100
3.9	20,200	13.5	81,950	23.1	144,350	32.7	206,750
4.0	20,800	13.6	82,600	23.2	145,000	32.8	207,400
4.1	21,420	13.7	83,250	23.3	145,650	32.9	208,050
4.2	22,040	13.8	83,900	23.4	146,300	33.0	208,700
4.3	22,660	13.9	84,550	23.5	146,950	33.1	209,350
4.4	23,280	14.0	85,200	23.6	147,600	33.2	210,000
4.5	23,900	14.1	85,850	23.7	148,250	33.3	210,650
4.6	24,520	14.2	86,500	23.8	148,900	33.4	211,300
4.7	25,140	14.3	87,150	23.9	149,550	33.5	211,950
4.8	25,760	14.4	87,800	24.0	150,200	33.6	212,600
4.9	26,380	14.5	88,450	24.1	150,850	33.7	213,250
5.0	27,000	14.6	89,100	24.2	151,500	33.8	213,900
5.1	27,620	14.7	89,750	24.3	152,150	33.9	214,550
5.2	28,240	14.8	90,400	24.4	152,800	34.0	215,200
5.3	28,860	14.9	91,050	24.5	153,450	34.1	215,850
5.4	29,480	15.0	91,700	24.6	154,100	34.2	216,500
5.5	30,100	15.1	92,350	24.7	154,750	34.3	217,150
5.6	30,720	15.2	93,000	24.8	155,400	34.4	217,800
5.7	31,340	15.3	93,650	24.9	156,050	34.5	218,450
5.8	31,960	15.4	94,300	25.0	156,700	34.6	219,100
5.9	32,580	15.5	94,950	25.1	157,350	34.7	219,750
6.0	33,200	15.6	95,600	25.2	158,000	34.8	220,400
6.1	33,850	15.7	96,250	25.3	158,650	34.9	221,050
6.2	34,500	15.8	96,900	25.4	159,300	35.0	221,700
6.3	35,150	15.9	97,550	25.5	159,950	35.1	222,350
6.4	35,800	16.0	98,200	25.6	160,600	35.2	223,000
6.5	36,450	16.1	98,850	25.7	161,250	35.3	223,650
6.6	37,100	16.2	99,500	25.8	161,900	35.4	224,300
6.7	37,750	16.3	100,150	25.9	162,550	35.5	224,950

Rating table for Tennessee River at Chattanooga, Tenn., for 1901.

Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
Feet.	Second Ft.	Feet.	Second Ft.	Feet.	Second ft.	Feet.	Second Ft.
6.8	38,400	16.4	100,800	26.0	163,200	35.6	225,600
6.9	39,050	16.5	101,450	26.1	163,850	35.7	226,250
7.0	39,700	16.6	102,100	26.2	164,500	35.8	226,900
7.1	40,350	16.7	102,750	26.3	165,150	35.9	227,550
7.2	41,000	16.8	103,400	26.4	165,800	36.0	228,200
7.3	41,650	16.9	104,050	26.5	166,450	36.1	228,850
7.4	42,300	17.0	104,700	26.6	167,100	36.2	229,500
7.5	42,950	17.1	105,350	26.7	167,750	36.3	230,150
7.6	43,600	17.2	106,000	26.8	168,400	36.4	230,800
7.7	44,250	17.3	106,650	26.9	169,050	36.5	231,450
7.8	44,900	17.4	107,300	27.0	169,700	36.6	232,100
7.9	45,550	17.5	107,950	27.1	170,350	36.7	232,750
8.0	46,200	17.6	108,600	27.2	171,000	36.8	233,400
8.1	46,850	17.7	109,250	27.3	171,650	36.9	234,050
8.2	47,500	17.8	109,900	27.4	172,300	37.0	234,700
8.3	48,150	17.9	110,550	27.5	172,950	37.1	235,350
8.4	48,800	18.0	111,200	27.6	173,600	37.2	236,000
8.5	49,450	18.1	111,850	27.7	174,250	37.3	236,650
8.6	50,100	18.2	112,500	27.8	174,900	37.4	237,300
8.7	50,750	18.3	113,150	27.9	175,550	37.5	237,950
8.8	51,400	18.4	113,800	28.0	176,200	37.6	238,600
8.9	52,050	18.5	114,450	28.1	176,850	37.7	239,250
9.0	52,700	18.6	115,100	28.2	177,500	37.8	239,900
9.1	53,350	18.7	115,750	28.3	178,150	37.9	240,550
9.2	54,000	18.8	116,400	28.4	178,800	38.0	241,200
9.3	54,650	18.9	117,050	28.5	179,450	38.1	241,850
9.4	55,300	19.0	117,700	28.6	180,100	38.2	242,500
9.5	55,950	19.1	118,350	28.7	180,750	38.3	243,150
9.6	56,600	19.2	119,000	28.8	181,400	38.4	243,800
9.7	57,250	19.3	119,650	28.9	182,050	38.5	244,450
9.8	57,900	19.4	120,300	29.0	182,700	38.6	245,100
9.9	58,550	19.5	120,950	29.1	183,350	38.7	245,750
10.0	59,200	19.6	121,600	29.2	184,000	38.8	246,400
10.1	59,850	19.7	122,250	29.3	184,650	38.9	247,050
10.2	60,500	19.8	122,900	29.4	185,300	39.0	247,700
10.3	61,150	19.9	123,550	29.5	185,950	39.1	248,350
10.4	61,800	20.0	124,200	29.6	186,600	39.2	249,000
10.5	62,450	20.1	124,850	29.7	187,250	39.3	249,650
10.6	63,100	20.2	125,500	29.8	187,900	39.4	250,300
10.7	63,750	20.3	126,150	29.9	188,550	39.5	250,950
10.8	64,400	20.4	126,800	30.0	189,200	39.6	251,600
10.9	65,050	20.5	127,450	30.1	189,850	39.7	252,250
11.0	65,700	20.6	128,100	30.2	190,500	39.8	252,900
11.1	66,350	20.7	128,750	30.3	191,150	39.9	253,550
11.2	67,000	20.8	129,400	30.4	191,800	40.0	254,200
11.3	67,650	20.9	130,050	30.5	192,450		
11.4	68,300	21.0	130,700	30.6	193,100		
11.5	68,950	21.1	131,350	30.7	193,750		

NOTE—This table applied to the foregoing "daily gage heights" gives the cubic feet per second flowing in the river on each date for which the gage height is given.

Estimated monthly discharge of Tennessee River at Chattanooga, Tennessee.

[Drainage area, 21,382 square miles.]

Month.	Discharge in second-feet			Total in acre-feet.	Run-off.	
	Maxi-mum.	Mini-mum.	Mean.		Depth in inches.	Second-feet per square mile.
1890.						
January	78,470	30,150	42,749	2,628,551	2.31	2.00
February	308,060	44,191	76,081	4,225,310	3.72	3.56
March	445,120	52,906	129,093	7,937,670	6.96	6.03
April	121,464	43,029	64,855	3,859,132	3.38	3.03
May	72,079	41,286	51,200	3,148,186	2.76	2.39
June	41,286	23,400	29,102	1,731,685	1.52	1.36
July	47,677	19,500	27,036	1,662,390	1.45	1.26
August	46,515	21,100	30,881	1,898,810	1.66	1.44
September	47,096	22,200	27,843	1,656,770	1.45	1.30
October	58,135	25,950	37,982	2,335,437	2.04	1.77
November	42,448	20,700	26,394	1,570,549	1.37	1.23
December	77,889	20,400	36,088	2,218,980	1.95	1.69
Per annum	445,120	19,500	48,275	34,873,470	30.57	2.26
1891.						
January	92,995	39,543	59,484	3,657,552	3.21	2.78
February	356,120	59,878	154,822	8,598,380	7.53	7.23
March	381,040	63,364	135,160	8,310,718	7.30	6.32
April	97,643	38,962	61,873	3,681,690	3.22	2.89
May	37,219	26,380	30,215	1,857,860	1.63	1.41
June	47,096	26,840	36,276	2,158,567	1.90	1.70
July	36,057	21,800	26,429	1,625,066	1.43	1.24
August	98,224	23,000	40,402	2,484,238	2.18	1.89
September	36,638	19,200	25,777	1,533,835	1.34	1.20
October	19,200	17,910	18,461	1,135,130	.99	.86
November	41,867	17,440	23,510	1,398,939	1.23	1.10
December	66,269	22,200	39,299	2,416,417	2.12	1.84
Per annum	381,040	17,440	54,309	38,858,392	34.08	2.54
1892.						
January	363,240	41,286	103,453	6,361,118	5.57	4.83
February	69,755	33,733	46,755	2,689,348	2.43	2.25
March	64,526	31,680	45,769	2,814,244	2.47	2.14
April	299,160	40,705	101,287	6,026,982	5.27	4.73
May	53,487	31,160	39,772	2,445,501	2.14	1.86
June	56,972	28,680	43,265	2,574,447	2.25	2.02
July	71,498	26,380	44,520	2,737,446	2.40	2.08
August	31,680	21,800	25,121	1,544,640	1.35	1.17
September	29,660	17,660	21,403	1,273,564	1.11	1.00
October	19,800	17,220	17,952	1,103,833	.97	.84
November	43,610	17,220	27,924	1,661,590	1.45	1.30
December	56,972	21,450	32,793	2,016,376	1.76	1.53
Per annum	363,240	17,220	45,835	33,249,089	29.17	2.15

*Estimated monthly discharge of Tennessee River at Chattanooga,
Tennessee—Continued.*

[Drainage area, 21,382 square miles.]

Month.	Discharge in second-feet.			Total in acre-ft.	Run-off.	
	Maxi-mum.	Mini-mum.	Mean.		Depth in inches.	Second-ft. per sq. mile.
1893.						
January	44,191	22,600	26,812	1,648,616	1.44	1.25
February	283,140	38,381	105,921	5,882,535	5.15	4.95
March	72,660	36,057	50,320	3,094,076	2.71	2.35
April	73,241	31,160	42,137	2,507,326	2.20	1.97
May	224,400	30,150	71,525	4,397,929	3.85	3.34
June	123,207	27,760	49,679	2,956,099	2.59	2.32
July	34,895	21,450	25,741	1,582,763	1.33	1.20
August	33,152	18,410	23,477	1,443,554	1.27	1.10
September	76,727	20,750	33,933	2,019,149	1.77	1.59
October	58,716	18,660	25,550	1,571,018	1.37	1.19
November	31,160	20,400	22,263	1,324,738	1.16	1.04
December	30,640	21,100	24,970	1,535,355	1.35	1.17
Per annum	283,140	18,410	41,861	29,963,158	26.24	1.96
1894.						
January	56,972	22,600	37,389	2,298,975	2.02	1.75
February	151,095	31,680	70,893	3,937,185	3.45	3.31
March	59,297	33,152	46,796	2,877,392	2.53	2.19
April	52,325	27,300	36,287	2,159,222	1.90	1.79
May	44,191	23,800	31,137	1,914,552	1.68	1.43
June	28,680	19,500	21,983	1,308,076	1.15	1.03
July	29,170	18,910	24,486	1,505,595	1.31	1.14
August	30,150	18,910	22,971	1,412,441	1.23	1.07
September	27,300	16,560	19,160	1,140,097	1.00	.90
October	20,750	16,360	17,445	1,072,658	.94	.82
November	20,400	16,360	17,330	1,031,204	.90	.81
December	68,012	16,780	30,862	1,897,643	1.66	1.44
Per annum	151,095	16,360	31,395	22,555,040	19.77	1.53
1895.						
January	261,780	23,400	76,446	4,700,512	4.12	3.57
February	47,096	24,200	35,787	1,987,503	1.74	1.67
March	134,827	42,448	72,341	4,448,103	3.90	3.38
April	78,470	37,219	51,047	3,037,501	2.67	2.39
May	58,135	34,314	43,929	2,701,106	2.37	2.05
June	35,476	21,100	26,417	1,651,917	1.37	1.23
July	63,364	20,750	29,638	1,822,381	1.60	1.39
August	38,381	21,800	26,927	1,655,687	1.45	1.26
September	24,660	16,780	20,316	1,208,883	1.05	.95
October	17,000	16,360	16,665	1,024,698	.90	.78
November	20,750	17,220	18,162	1,080,714	.94	.85
December	33,152	17,660	21,561	1,325,743	1.16	1.01
Per annum	261,780	16,360	36,603	26,564,748	23.27	1.71

*Estimated monthly discharge of Tennessee River at Chattanooga,
Tennessee—Continued.*

[Drainage area, 21,418 square miles.]

Month.	Discharge in second-feet.			Total in acre-feet.	Run-off.	
	Maxi- mum.	Mini- mum.	Mean		Depth in inches.	Second- ft. per sq. mile.
1896.						
January	50,600	15,554	26,169	1,609,079	1.41	1.22
February	85,052	26,840	55,577	3,196,826	2.79	2.59
March	95,150	22,088	39,257	2,413,834	2.11	1.83
April	409,520	23,276	87,649	5,215,478	4.56	4.09
May	29,216	14,366	20,574	1,265,054	1.10	0.96
June	43,472	17,336	24,365	1,449,815	1.27	1.14
July	130,196	20,306	55,390	3,405,820	2.99	2.59
August	34,562	14,960	22,433	1,379,360	1.21	1.05
September	18,524	9,020	12,346	734,636	.64	.58
October	19,712	8,426	11,588	712,523	.62	.54
November	57,728	9,020	22,603	1,344,969	1.18	1.06
December	45,254	16,148	27,951	1,718,651	1.51	1.31
The year	409,520	8,426	33,825	24,446,045	21.39	1.58
1897.						
January	45,254	16,148	27,932	1,717,483	1.50	1.30
February	308,060	19,712	89,962	4,996,236	4.37	4.20
March	363,240	52,976	165,448	10,173,067	8.90	7.72
April	231,520	36,344	81,056	4,823,156	4.22	3.78
May	134,948	26,543	50,124	3,082,025	2.70	2.34
June	38,126	21,494	29,107	1,731,983	1.52	1.36
July	74,657	21,791	34,428	2,116,909	1.86	1.61
August	34,562	14,366	25,847	1,589,280	1.39	1.21
September	14,960	6,050	8,951	532,620	.47	.42
October	13,772	4,268	7,842	482,189	.43	.37
November	9,614	6,050	7,350	436,164	.38	.34
December	62,183	8,129	24,627	1,514,265	1.33	1.15
The year	363,240	4,268	46,055	33,195,377	29.07	2.15
1898.						
January	124,860	14,344	59,509	3,778,785	3.20	2.77
February	47,115	16,900	22,994	1,277,022	1.11	1.07
March	88,725	15,008	24,774	1,523,304	1.28	1.11
April	121,940	39,085	60,048	3,573,096	3.12	2.80
May	38,720	17,920	23,701	1,457,327	1.28	1.11
June	32,515	10,245	16,395	975,569	.85	.77
July	49,670	11,853	20,063	1,233,633	1.08	.94
August	107,705	20,410	50,638	3,113,629	2.72	2.36
September	174,500	18,190	47,349	2,817,454	2.46	2.21
October	115,370	16,900	44,215	2,718,691	2.38	2.06
November	42,005	20,700	28,415	1,690,806	1.48	1.33
December	35,800	19,000	28,909	1,777,556	1.56	1.25
The year	174,500	10,245	35,584	25,936,872	22.52	1.66

*Estimated monthly discharge of Tennessee River at Chattanooga,
Tennessee—Continued.*

[Drainage area, 21,418 square miles.]

Month.	Discharge in second-feet.			Total in acre-feet.	Run-off.	
	Maxi-mum.	Mini-mum.	Mean.		Depth in inches.	Second-feet per square mile.
1899.						
January	112,560	25,450	47,250	2,905,289	2.55	2.21
February	233,150	30,720	95,554	5,306,801	4.64	4.46
March	244,000	55,210	142,700	8,774,281	7.68	6.66
April	137,360	39,710	69,286	4,122,803	3.59	3.23
May	65,130	22,040	40,450	2,487,173	2.18	1.89
June	35,990	15,600	23,088	1,373,831	1.20	1.08
July	27,930	10,430	15,053	925,573	.81	.70
August	22,040	8,040	11,900	731,702	.64	.56
September	15,840	7,300	10,118	603,063	.53	.47
October	10,635	6,600	7,851	482,739	.43	.37
November	10,635	6,775	8,216	488,886	.43	.38
December	41,880	8,820	22,061	1,356,478	1.19	1.03
The year	244,000	6,600	41,127	29,557,619	25.87	1.09
1900.						
January	54,280	11,660	30,807	1,894,248	1.66	1.44
February	144,800	13,360	52,077	2,892,210	2.53	2.43
March	103,880	42,810	66,020	4,059,412	3.55	3.08
April	70,400	32,820	46,819	2,785,924	2.44	2.19
May	34,440	15,600	21,086	1,296,528	1.13	.98
June	53,040	14,680	33,295	1,981,190	1.73	1.55
July	50,870	13,360	24,674	1,517,145	1.33	1.15
August	34,440	10,020	14,602	897,841	.78	.68
September	25,140	7,300	13,393	796,939	.70	.63
October	42,500	8,040	14,230	874,968	.76	.66
November	92,720	10,840	25,138	1,495,815	1.31	1.17
December	53,040	17,050	29,001	1,783,201	1.56	1.35
The year	144,800	7,300	30,928	22,275,421	19.48	1.44
1901.						
January		189,200	19,600	50,641	2.72	2.36
February		59,850	19,050	36,516	1.77	1.70
March		139,150	19,050	44,952	2.42	2.10
April		166,450	38,400	95,080	4.95	4.44
May		205,450	26,380	68,736	3.70	3.21
June		72,200	33,850	47,673	2.49	2.23
July		37,100	14,680	23,932	1.29	1.12
August		207,400	13,800	75,761	4.08	3.54
September		61,150	22,660	38,859	2.02	1.81
October		25,760	13,360	18,979	1.03	.89
November		13,800	11,660	13,076	.68	.61
December		237,300	12,080	65,509	3.53	3.06
The year		237,200	11,660	48,310	30.68	2.26

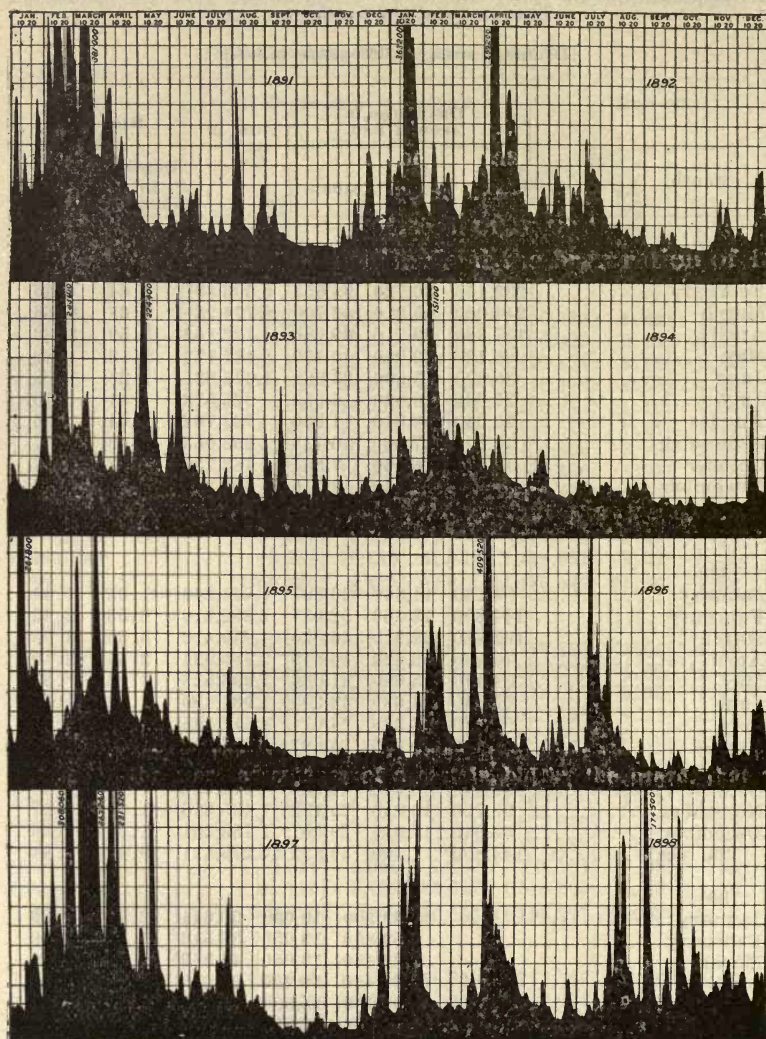


Fig. 16—Discharge of Tennessee River at Chattanooga, Tenn, 1891-1898.

Minimum monthly discharge of Tennessee River at Chattanooga, Tenn., with corresponding net horsepower per foot of fall on a water wheel realizing 80 per cent. of the theoretical power.

	1899.			1900.			1901.		
	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.	Minimum cubic feet per second.	Minimum net H. P. per foot of fall.	No. of days duration of minimum.
January	25,450	2,314	1	11,660	1,060	1	19,600	1,782	1
February ...	30,720	2,793	1	13,360	1,215	1	19,050	1,732	1
March	55,210	5,019	1	42,810	3,892	2	19,050	1,732	4
April	39,710	3,610	1	32,820	3,075	1	38,400	3,491	1
May	22,040	2,004	1	15,600	1,418	1	23,390	2,398	1
June	15,600	1,418	1	14,680	1,335	1	33,850	3,077	1
July	10,430	948	1	13,360	1,215	2	14,680	1,335	3
August	8,040	731	3	10,020	911	1	13,800	1,255	2
September ..	7,300	664	1	7,300	664	1	22,660	2,060	1
October	6,600	600	3	8,040	731	2	13,360	1,215	2
November ..	6,775	616	2	10,840	985	2	11,660	1,060	1
December ..	8,820	802	2	17,050	1,550	2	12,080	1,098	1

NOTE.—To find the minimum net horse power available at a shoal on this stream, near this station, for any month, multiply the total fall of the shoal by the "net H. P. per foot of fall" in this table for that month.

2. SHOALS IN TENNESSEE RIVER NEAR FLORENCE, ALABAMA.

In Tennessee River, in the vicinity of Florence, Ala., (see Fig. 96), are several shoals capable of the development of power in large quantities. The compiler has brought together the data regarding these, his intention being not to discuss the manner in which the immense water power of these shoals can be developed, but to give some idea of its magnitude and the possibility of its utilization.

The shoals are a succession of cascades amid many islands, in a river bed varying in width from a half mile to three miles. The numerous channels thus formed are very irregular in fall and direction. The difference between high and low water is only 5 or 6 feet, corresponding to a rise of 50 feet at Chattanooga. Beginning at Brown's Ferry, 12 miles below Decatur, Ala., the river has the following falls:

From Browns Ferry to the mouth of Elk River the fall is 26 feet in 11 miles. This is known as Elk River Shoals. Its most precipitous part is at the lower end, where there is a fall of 16.5 feet in about 4 miles.

From the mouth of Elk River to the head of Muscle Shoals, a distance of 5 miles, there is a fall of only 2 feet.

From the head of Muscle Shoals to Bainbridge the fall is 85 feet in 17 miles, and is known as Big Muscle Shoals.

From Bainbridge to Florence the fall is 23 feet in 7 miles, and is known as Little Muscle Shoals.

From Florence to the head of the Colbert Shoals the fall is 3 feet in 11 miles.

From the head of the Colbert Shoals to Waterloo the fall is 21 feet in 6 miles.

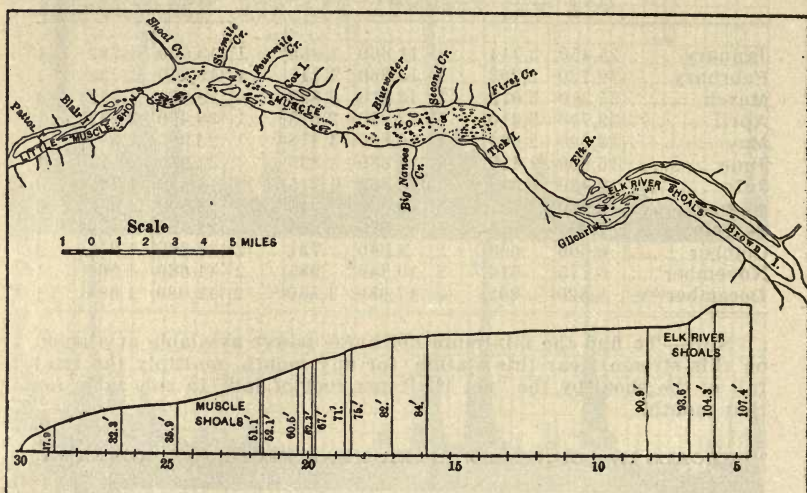


Fig. 17.—Map showing shoals in Tennessee River, near Florence, Ala.

The total fall from Browns Ferry to Waterloo is, therefore, 160 feet in a distance of 57 miles. Sixteen miles of the distance, however, has a fall of only 5 feet, leaving a fall of 155 feet in the 41 miles that cover the four shoals mentioned. The shoals are really more precipitous than the foregoing figures would indicate. For instance, 84.6 feet of the fall at Big Muscle Shoals is in a distance of 14 miles.

The bed rock at Elk River Shoals is Carboniferous limestone; that of Muscle Shoals is a hard silicious rock of dark color and flinty structure.

The following is a statement of the minimum discharge of Tennessee River at Chattanooga:

*The numbers 5 to 30 at bottom of cut represent miles.

	<i>Sec.-ft.</i>
From 1890 to 1895, inclusive	16.
From 1896 to 1900, inclusive.....	6,600
From January 1 to November 16, 1901, inclusive	12,930

From this it is estimated that 6,600 second-feet is the minimum discharge for driest years, and that 12,930 second-feet is the minimum for average years. Assuming that tributaries entering the river below Chattanooga will safely supply all of the water needed for lockage, we can use these discharges in estimating the water power of these shoals, which are about 200 miles below Chattanooga, by river, and drain an area more than 7,000 square miles greater than the watershed above Chattanooga.

Estimated minimum net horsepower of Tennessee River in Alabama on turbines realizing 80 per cent. of the theoretical power.

Locali.y.	Fall	Minimum net power in driest years.	Minimum net power in average years.
	<i>Fall.</i>	<i>Horsepower.</i>	<i>Horsepower.</i>
Elk River Shoals	26	15,600	30,550
Big Muscle Shoals	85	51,000	99,875
Little Muscle Shoals	23	13,800	27,025
Colbert Shoals	21	12,600	24,675
Total	155	93,000	182,125

The foregoing table assumes that the total fall can in each case be utilized. While this assumption is not correct, it stands as an offset to the assumption that the water supply available will be as low as the minimum discharge at Chattanooga, 200 miles above. The drainage area above Chattanooga is 21,418 square miles, while the drainage area above the shoals under consideration is about 29,000 square miles. It may therefore safely be assumed that the actual power available for development at the shoals is greater than that shown by the table.

The foregoing statements of fall and distance are from a report by Mr. William B. Gaw, chief assistant engineer, United States Army, 1868, and the map and profile are from drawings prepared under the direction of Lieut. Col. J. W. Barlow, United States Engineers, 1890.

3. TRIBUTARIES OF TENNESSEE RIVER.

Paint Rock Creek, Elk River, Shoal Creek, Flint Creek, Big Nance Creek, Town Creek, and Big Bear Creek are all large streams, and most of them have fine undeveloped water powers. But no surveys have been made of them, and no measurements of discharge so far. There are also many large bold springs in this basin, that are said to have a pure and unfailing water supply, but the Hydrographic Survey has not reached them, and no report can be made on them at this time.

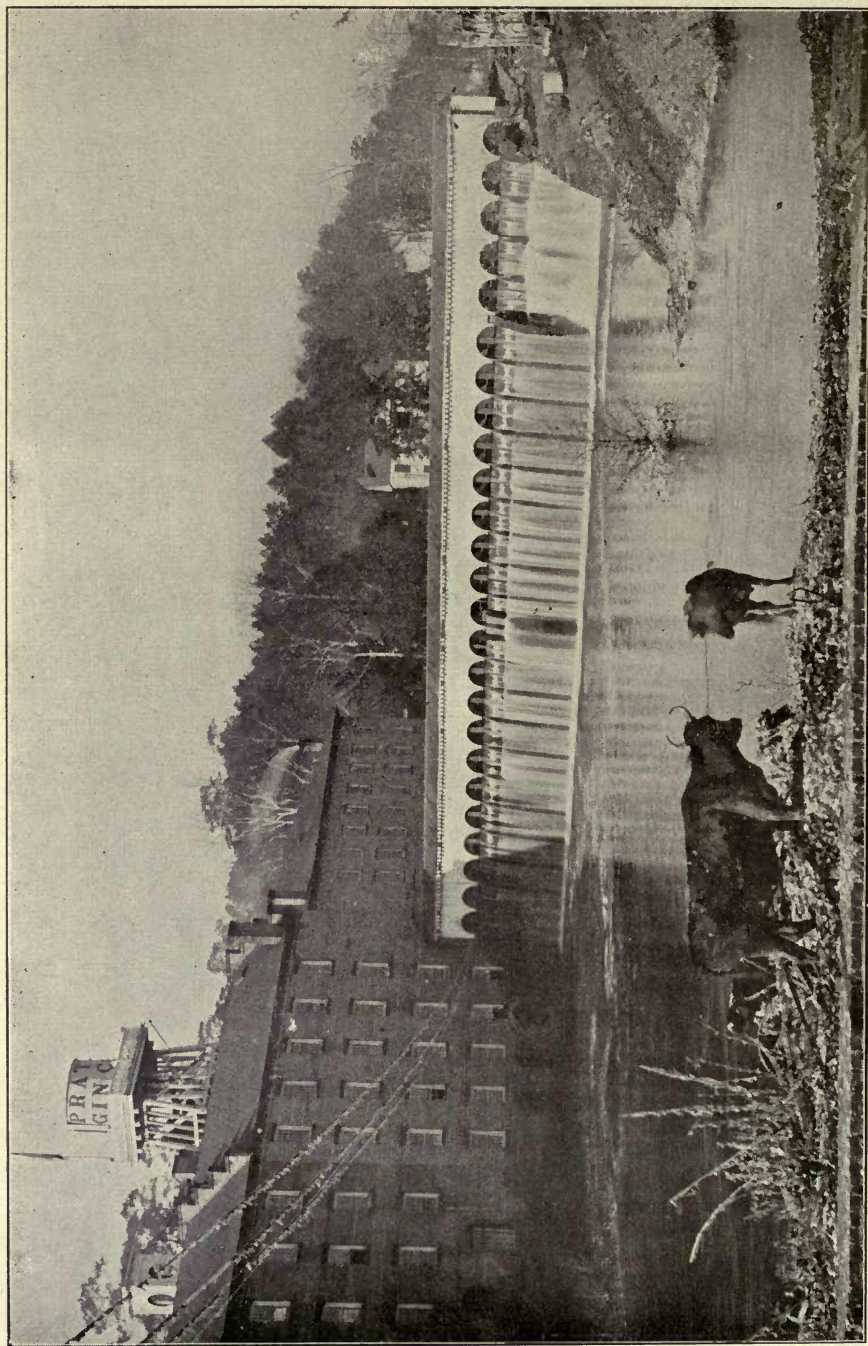


Plate D. Dam of the Pratt Gin Company, on Autauga Creek, Prattville, Ala.

CHAPTER VIII.

UTILIZED WATER POWERS OF ALABAMA.

The following is a list by counties of the water powers that are utilized. The most of these powers are small, but they make a large aggregate, and they represent only an insignificant part of the power that is capable of development.

*AUTAUGA COUNTY.

	NAME.	POSTOFFICE.	INDUSTRY.	H. P.
	Charity P. Carter, Billingsley, flour and grist mill.....			15
	Montgomery's Mill, Prattville, flour and grist mill.....			30
	Public Grist Mill, Billingsley, flour and grist mill			9
	Parker's Mill, Milton, flour and grist mill.....			20
	Dawson's Mill, Netezen, lumber and timber mill.....			20
	Ellis Mill, Jones Switch, lumber and timber mill.....			4
	Long Leaf Yellow Pine Saw Mill, Autaugaville, lumber and			
*	timber mill			15
	Ray's Saw Mill, Jones Switch, lumber and timber mill.....			10
	Swift Creek Mill Co. (Swift Creek), Autaugaville, lumber and			
	timber mill			70
	John H. Herod, Netezen, lumber and timber mill.....			6
	Prattville Cotton M. & Banking Co. (Autauga Creek), Pratt-			
	ville, cotton goods. The dam at Prattville is shown in			
	Plate D opposite			200
	Continental Gin Co., (Autauga Creek), Prattville, cotton gin			
†	Prattville Ice Factory (Autauga Creek), Prattville, ice factory			
	Doster Ginnery (Autauga Creek), Prattville, cotton gin.....			
	G. H. Roy, Vine Hill, cotton gin			

WATER POWER AT PRATTVILLE.

The water power at Prattville was first developed about 1830, when it was used by a man named May to operate a small saw mill. About 1833 this water power and the adjacent lands were purchased by Mr. Daniel Pratt, who then erected a cotton gin factory, which was driven by the water power. The dam at that time was about eight feet high. A number of years after the purchase of this property by Mr. Pratt he increased the dam so that it now has a height of 16 feet, and is built of brick. At present it is used jointly by the Prattville Cotton Mills & Banking Company and the Continental Gin Company, the former using about 255 horse-power and the latter about 100 horse-power. About half a mile below the dam above referred to is another dam affording about 8 feet head, and owned by the M. E. Pratt estate. This power operates a grist

*From U. S. Census, 1900.

†From report of Probate Judge.

mill, cotton ginnery and ice factory, and the water wheel at that point has a rated capacity of 54 horse-power. About one mile above the dam of the Cotton Mill and Gin Company, there was formerly another dam 12 feet high, which afforded power for a cotton mill. This mill, however, was burned a number of years ago, and the dam has been allowed to go to ruin. It would probably afford 200 horse-power, or possibly a little more, should it be rebuilt.

There is also a dam about two miles below Prattville known as the Montgomery mill property. This dam is about 12 feet high and affords power for a grist mill and ginnery. Only a small portion of the available power is used. It could afford, easily, 250 horse-power if the proper wheels were installed.

*BARBOUR COUNTY.

NAME.	POSTOFFICE.	INDUSTRY.	H. P.
Hagler's Mill, Louisville, flour and grist mill.....			17
Carpenter's Mill, Louisville, flour and grist mill.....			15
Hoffman's Mill, Clayton, flour and grist mill			50
Hartman's Mill, Clayton, flour and grist mill			10
Zorn Mills, Lodi, flour and grist mill			8
William M. Wood, Bush, flour and grist mill.....			12
Will Stewart, White Oak Springs, flour and grist mill.....			12
Winn's Mill, Clayton, flour and grist mill.....			12
John White, Spivey, flour and grist mill			10
Weston's Mill, Louisville, flour and grist mill.....			8
H. J. Turner, White Oak Springs, flour and grist mill.....			10
Spencer's Mill, Clayton, flour and grist mill.....			10
Perkin's Mill, Elamville, flour and grist mill			12
Angus McSwain, White Oak Springs, flour and grist mill.....			12
William Johnson, Clayton, flour and grist mill.....			10
John M. Jenkins, Starhill, flour and grist mill.....			10
Solomon's Mills, Solomon's Mills, flour and grist mill.....			25
Danner Mill, Elamville, flour and grist mill.....			12
William H. Chambers, Oateston, flour and grist mill.....			12
Wilson Deshazo, Cottonhill, flour and grist mill.....			16

BIBB COUNTY.

*	Scottsville Flour & Grist Mill, Scottsville, flour and grist mill	30
	Palmetto Flouring & Grist Mill, Brierfield, flour and grist mill	30
*	Williams Grist Mill, Blocton, flour and grist mill.....	10
	William S. Mathews, Data, flour and grist mill.....	8
†	Six Mile Custom Mill, Six Mile, flour and grist mill.....	15
	Mayfield Bros., Mertz, lumber and timber mill.....	29
†	Scottsville, Wool Carder, Scottsville, woolen goods.....	20
	J. M. Battle, (Six Mile Creek), Six Mile, flour and grist mill.	50
†	W. C. Trott, (Six Mile Creek), Six Mile, cotton gin and grist mill.....	50
	W. H. Thomas, (Six Mile Creek), Ashley, lumber and grist mill	35
	Dock Mahan, (Mahn's Creek), Brierfield, wool carder and grist mill	40

*From U. S. Census, 1900.

†From report of Probate Judge.

NAME.	POSTOFFICE.	INDUSTRY.	H. P.
Bessemer Land & Improvement Co. (Schultz Creek), Lopez,		wool caruer, grist mill and cotton gin	100
R. R. McCally, (Hills Creek), Blocton, gin, lumber and grist		mill	30
† E. M. Timbro, (Schultz Creek), Centerville, grist mill.....			30
F. H. James, (Haysoppy Creek), Centerville, grist mill.....			20
A. L. Elam, (Affonee Creek,) Affonee, grist mill.....			15

*BLOUNT COUNTY.

Logan Snead, Snead, flour and grist mill.....	10
E. B. Head, Gum Spring, flour and grist mill.....	16
E. R. Wood, Wynnville, flour and grist mill.....	8
Hendrick's Mill, Swansea, flour and grist mill.....	30
Jones M. Burns, Clarence, flour and grist mill.....	15
Wilson Adcock, Tidmore, flour and grist mill.....	10
G. M. D. Tidwell & Sons, Tidwell, flour and grist mill.....	20
Alldridge & Brother, Liberty, flour and grist mill.....	10
Brittain Mill, Summit, flour and grist mill.....	20
Morris' Mill, Ensley, flour and grist mill.....	10
Rufus F. Wyatt, Bangor, flour and grist mill.....	10
Sam Mardis, Blountsville, flour and grist mill.....	60
Jno. H. Donahoo & Geo. W. Darden, Rosa, lumber and timber	20

BULLOCK COUNTY.

Brooks' Mill, Mascotte, flour and grist mill.....	6
Union Springs Waste Mill, Union Springs, flour and grist mill	15
Chappell's Grist Mill, Union Springs, flour and grist mill.....	10
D. H. Mason, (McBride's Creek), Indian, lumber, gin and grist	20
From report of Probate Judge.	
†Chas. Radford, (Conecuh Creek), Union Springs, grist mill..	10

*BUTLER COUNTY.

John W. Halso, Pigeon Creek, flour and grist mill.....	10
Glen Graham, Pontus, flour and grist mill.....	6
The Four Mile Mill, Greenville, flour and grist mill.....	10
The N. M. Rhodes Mill & Mercantile Co., Shell, flour, grist and	
lumber mill	50
Mrs. M. E. Crane, Monterey, flour and grist mill.....	15
Rouse & Whiddon, Greenville, flour and grist mill.....	50

CALHOUN COUNTY.

Joseph Francis, Cane Creek, flour and grist mill.....	50
Richey Mill, Jacksonville, flour and grist mill.....	20
Canada Grist Mill, Womack, flour and grist mill.....	16
Cold Water Mills, Cold Water, flour and grist mill.....	20
Read's Mill, Reads, flour and grist mill.....	60
* Luther Barton, Piedmont, flour and grist mill.....	20
W. F. McCulley, Oxford, flour and grist mill.....	20
A. McCurdy, White Plains, flour and grist mill.....	34
Morris Grist Mill, Morrisville, flour and grist mill.....	18
Nisbet's Mill, Jacksonville, flour and grist mill.....	30
James A. Weatherly, DeArmanville, flour and grist mill.....	8

*From U. S. Census, 1900.

†From report of Probate Judge.

	NAME.	POSTOFFICE.	INDUSTRY.	H. P.
	Wood Milling Co.,	Ohatchee,	flour and grist mill.....	26
*	Davis & Henderson,	Piedmont,	flour and grist mill.....	24
	Hendon's Grist Mill,	Iron City,	flour and grist mill.....	10
	Hughes' Saw Mill,	Oxford,	lumber and timber mill.....	28
	F. M. Whiteside,	(Choccolocco Creek),	White Plains.....	25 or 30
	Downing & Morris,	(Choccolocco Creek),	Choccolocco	50
	J. T. DeArman,	(Choccolocco Creek),	Anniston	15
	W. E. Mellon,	(Choccolocco Creek),	Oxford	40
	Lee's Mill,	(Choccolocco Creek),	Oxford	30
	T. G. Slaughter,	(Choccolocco Creek),	Oxford	15
	J. H. Savage,	(Terrapin Creek),	Anniston	20
	J. H. Savage,	(Terrapin Creek),	Anniston	20
	Frank Aderhold,	(Nances Creek),	Ladiga.....	20
	John Ramagnand,	(Champion Creek),	Jacksonville.....	15
	James Crook,	(Tallasseehatchee Creek),	Jacksonville.....	10
	W. J. Edmondson,	(Tallasseehatchee Creek),	Anniston	30
	W. A. Prickett,	(Tallasseehatchee Creek),	Alexandria.....	10
	Beaty Estate,	(Tallasseehatchee Creek),	Alexandria.....	30
†	Peter Heifner,	(Tallasseehatchee Creek),	Alexandria.....	15
	James Aderhold,	(Ohatchee Creek),	Reads.....	20
	Pleas. Martin,	(Ohatchee Creek),	Peekshill.....	25
	C. J. Wood,	(Ohatchee Creek),	Jacksonville.....	30
	Wm. Thompson,	(Ohatchee Creek),	Peekshill.....	8
	R. L. Treadway,	(Tallasseehatchee Creek),	Anniston, R. F. D	10
	J. H. Francis,	(Tallasseehatchee Creek)	.....	25
	R. H. Cobb,	(Tallasseehatchee Creek),	Anniston.....	20
	G. W. S. Loyd,	(Cane Creek),	Peaceburg.....	10
	Mrs. Loyd,	(Cane Creek),	Peaceburg, gin	6
	Morris Mfg. Co.,	(Cane Creek),	Morrisville, shops.....	30
	E. G. Morris,	(Cane Creek),	Morrisville	30
	P. H. Brothers,	(Cane Creek),	Zula	30
	J. H. Francis,	(Cane Creek)	.....	50

*CHAMBERS COUNTY.

D. E. M. Smith,	Barber,	flour and grist mill.....	24
Cumbees Grist Mill,	Stroud,	flour and grist mill.....	20
Thomas H. Fuller,	Lafayette,	flour and grist mill.....	10
R. T. Humphrey,	West Point, Ga.,	flour and grist mill.....	42
J. T. Hudson,	Hickory Flat,	flour and grist mill.....	4
Wyche Robinson,	Lafayette,	flour and grist mill.....	16
Stephens' Mill,	Driver,	flour and grist mill.....	8
Ripville Mills,	Wise,	flour and grist mill.....	20
Charles F. Higin,	Finley,	flour and grist mill.....	20
J. E. Dixon,	Lafayette,	flour and grist mill.....	10
Ratchford & Tucker,	Lafayette,	flour and grist mill.....	10
Benjamin F. Knight,	Lafayette,	flour and grist mill.....	10
Woodydy & Beall,	Moorefield,	flour and grist mill.....	6
Leverett's & Abernathy's Mill,	Milltown,	flour and grist mill..	4
John B. Calhoun,	Camphill,	flour and grist mill.....	8
G. L. Leverett,	Lafayette,	flour and grist mill.....	16
West Point Mfg. Co.,	West Point,	cotton goods.....	1,100

*From U. S. Census, 1900.

†From report of Probate Judge.

‡From report of L. J. Morris.

CHEROKEE COUNTY.

NAME.	POSTOFFICE.	INDUSTRY.	H. P.
* Shamblin & Toles Mill, Broomtown, flour and grist mill.....			8
Chandler & Stinson, Center, flour and grist mill.....			20
Shamblin & Toles Mill, Broomtown, flour and grist mill.....			20
J. A. Lumpkin, Forney, flour and grist mill.....			13
Hurleys Mill, Hurley, flour and grist mill.....			12
Tyre G. Craig, Grover, flour and grist mill.....			12
* Rush Mill, Lawrence, flour and grist mill.....			10
E. W. Ragdale, Spring Garden, flour and grist mill.....			30
W. F. Timmerman, Round Mountain, flour and grist mill....			8
M. E. Cohia, Cedar Bluff, flour and grist mill.....			24
M. J. Abernathy, Pleasant Gap, lumber and timber mill.....			15
Hurricane Creek Mfg. & Min. Co., Spring Garden, cotton goods			65
W. A. Stinson, (Terrapin Creek), Center, gin, flour and grist			60
J. J. Scroggin, (Terrapin Creek), Coloma, gin, flour and grist			60
T. F. Stewart, (Terrapin Creek), Spring Garden, flour and grist			60
J. M. Adderhold, (Mill Creek), Piedmont, flour, grist and gin			40
M. L. Braswell, (Hurricane Creek), Pleasant Gap, flour & grist			40
B. F. Newberry, (Yellow Creek), Round Mountain, flour, grist, and gin mill			40
E. Cobla, (Chattooga River), Cedar Bluff, flour, grist, and gin			60
† R. A. Russell & Co. (Chattooga River), Gaylesville, flour, grist and gin mill			60
W. F. Henderson, (Mill Creek), Fullerton, flour, grist and gin			40
Rush & Rinehart, (Chattooga River), Fullerton, flour, grist, gin			60
J. G. Toles, (Mill Creek), Broomtown, grist and gin mill....			40
Elliot Bros., (North Spring Creek), Grassland, grist and gin			40
J. T. Webb & Bros., (Spring Creek), Hurley, grist and gin mill			40
J. D. Jordan, (South Spring Creek), Noah, grist and gin mill..			20

*CHILTON COUNTY.

James Dorming, Jemison, flour and grist mill.....	10
Mahan's Mill, Clanton, flour and grist mill.....	20
W. W. Sansome, Adams, flour and grist mill.....	12
Honeycutt Mill, Jemison, flour, grist, lumber and timber mill	20

*CHOCTAW COUNTY.

Pink Blackwell, Hinton, flour and grist mill.....	12
Aquilla Mills, Aquilla, lumber and timber mill.....	16

*CLARKE COUNTY.

Gate's Mill, Vashti, flour and grist mill.....	30
Fleming's Grist Mill, Nealton, flour and grist mill.....	10
Dacy's Mill, Whatley, flour and grist mill.....	5

*From U. S. Census, 1900.

†From report of Probate Judge.

*CLAY COUNTY.

NAME.	POSTOFFICE.	INDUSTRY.	H. P.
Henry F. Smedley, Mellow Valley, flour and grist mill.....			15
Hezakiah Ingram, Hatchett Creek, flour and grist mill.....			10
Allen P. Jenkins, Delta, flour and grist mill.....			14
Knight's Mill, Wesobulga, flour and grist mill.....			14
F. M. Munroe, Millerville, flour and grist mill.....			40
John R. Gilbert, Pinckneyville, flour and grist mill.....			8
Hodnett & Co., Hat, flour and grist mill.....			10
Moses R. Watts, Dean, flour and grist mill.....			6
Thomas J. Watts, Shinbone, flour and grist mill.....			8
Bishop, Carpenter & Co., Cherry, flour and grist mill.....			10
Cockrell & Mitchell, Goldburg, flour and grist mill.....			14
McRairie, Gladney & Co., Cherry, flour and grist mill.....			20
Virginia Whellen, Coleta, flour and grist mill.....			6
Stephens & East, Delta, flour and grist mill.....			4
Deberry & Griffin, Flatrock, flour and grist mill.....			15
Child's Mill, Swann, flour and grist mill.....			5
James B. Brown, Pinckneyville, flour and grist mill.....			6
James J. Bachus, Fishhead, flour and grist mill.....			24
Brooks & Handley, Hatchett Creek, flour and grist mill.....			8
Columbus Bell, Lineville, lumber and timber mill.....			10
J. C. Kennedy, Fishhead, lumber and timber mill.....			14
William M. Patterson, Meadow, lumber and timber mill.....			30
Ward & Ford, Lineville, lumber and timber mill.....			15

*CLEBURNE COUNTY.

J. T. & E. W. Beason, Beasons Mill, flour and grist mill.....	10
W. M. Evans, Edwardsville, flour and grist mill.....	20
Robert Mill, Oaklevel, flour and grist mill.....	16
Teague & Co., Eudora, flour and grist mill.....	13
H. F. Alsabrook, Borden Springs, flour and grist mill.....	30
Buttram's Mill, Bucham, flour and grist mill.....	20
John A. Brown, Bell Mills, flour and grist mill.....	16
John I. Burgess, Edwardsville, flour and grist mill.....	20
Wade H. Barnes, Muscadine, flour and grist mill.....	4
J. W. Conner, Chulafinnee, flour and grist mill.....	6
Lyon & Killebrue, flour and grist mill.....	34
W. G. Miligan, Oakfuskee, flour and grist mill.....	8
James McMahan, Edwardsville, flour and grist mill.....	12
E. W. Pitchford, Oaklevel, flour and grist mill.....	15
William J. Thrash, Oakfuskee, flour and grist mill.....	6
Wade H. Barnes, Muscadine, flour and grist mill.....	30
W. H. Tumlin & D. S. Baber, Ai, flour and grist mill.....	16

*COFFEE COUNTY.

Levy Wise, Ino, flour and grist mill.....	5
Bell Mill, Dot, flour and grist mill.....	8
Lenora F. Hildreth, Enterprise, flour and grist mill.....	17
Harper Flour Mills, Brockton, flour and grist mill.....	4
F. M. Prestwood, Fresco, flour and grist mill.....	20
McIntosh Mill, Eta, flour and grist mill.....	8
Wise's Lower Mill, Elba, flour and grist mill.....	12
Wise's Upper Mill, Elba, flour and grist mill.....	10
Buck & Co., Penn, lumber and timber mill.....	50

*From U. S. Census, 1900.

*COLBERT COUNTY.

NAME.	POSTOFFICE.	INDUSTRY.	M. P.
George Martin, Allsboro,	flour and grist mill.....		8
James Burns, Mand,	flour and grist mill.....		4
Tuscumbia Mill, Tuscumbia,	flour and grist mill.....		40
C. C. Hester, Tuscumbia,	flour and grist mill.....		40
Chambee's Grist Mill, Tuscumbia,	flour and grist mill.....		8
Dillard's Mills, Russellville,	lumber and timber.....		12
Steenenson's Mill, Sheffield,	lumber and timber		30

*CONECUH COUNTY.

George Stenson, Bonnette,	flour and grist mill.....		12
James B. Pate, Brooklyn,	flour and grist mill.....		5
William M. Robinson, Brooklyn,	flour and grist mill.....		5
Jimson C. Cox, Gem,	flour and grist mill.....		5
John N. Varner & Chas. M. Varner,	Herbert, flour and grist..		10
James E. Wilson, Mount Union,	flour and grist mill.....		20
Ransom H. Finley, Zern,	flour and grist mill.....		8
G. G. Broker, Bowles,	lumber and timber mill.....		10
Cary & Johnston, Brooklyn,	lumber and timber mill.....		15
T. N. Piggott, Gravella,	lumber and timber mill.....		40
Robinson Bros., Brooklyn,	lumber and timber mill.....		30
H. J. Robinson, Burnt Corn,	lumber and timber mill.....		40
Henry Wills, Finklet,	lumber and timber mill.....		30

*COOSA COUNTY.

Miller's Mill, Bentleyville,	flour and grist mill.....		20
Nolen's Mill, Darden,	flour and grist mill.....		15
J. T. M. Hodnett & O. P. Hodnett,	Equality, flour and grist mill		12
W. N. Neighbors, Goodwater,	flour and grist mill.....		23
Smith's Mill, Nixburg,	flour and grist mill.....		10
George P. Waits, Rockford,	flour and grist mill.....		8
Crawford Mill, Rockford,	flour and grist mill.....		4
Lawson Grist and Saw Mill,	Rockford, lumber and timber mill		36

*COVINGTON COUNTY.

A. J. Fletcher, Andalusia,	flour and grist mill.....		10
Uatu Grist Mill, Andalusia,	flour and grist mill.....		10
William Sharp, Ealums,	flour and grist mill.....		10
Davis B. Gantt, Gantt,	flour and grist mill.....		12
C. E. Rawls, Gantt,	flour and grist mill.....		10
Dorsey's Mill, Glasiasko,	flour and grist mill.....		10
James Aplin, Green Bay,	flour and grist mill.....		20
William Watkins, Liberty Hill,	flour and grist mill.....		8
Kearsey's Mill, Redlevel,	flour and grist mill.....		5
Ephram F. Lassiter, Rosehill,	flour and grist mill.....		10
Thomas Saw Mill, Redlevel,	lumber and timber mill.....		25
Simmons Mill, Beck,	lumber and timber mill.....		40
J. A. Prestwood, Jr., Andalusia,	lumber and timber mill.....		40
George W. Lee, Rat,	lumber and timber mill.....		20
Buck Creek Mill, River Falls,	lumber and timber		80
J. F. Guthrie, Vera Cruz,	lumber and timber mill.....		25
Gunter's Mill, Andalusia,	lumber and timber mill.....		40
Gunter's Saw Mill, Gantt,	lumber and timber mill.....		15
Gantt's Mill, River Falls,	lumber and timber mill.....		70
Pollard Gantt, Searight	lumber and timber mill.....		35
Davis B. Gantt, Gantt,	lumber and timber mill.....		40
N. B. Dixon, Mason,	lumber and timber mill.....		60
Bartlett & Barker,	lumber and timber mill.....		60

*From U. S. Census, 1900.

*CRENSHAW COUNTY.

NAME.	POSTOFFICE.	INDUSTRY.	H. P.
E. P. Lasseter, Bullock, flour and grist mill.....			8
G. B. Morgan, Bullock, flour and grist mill.....			15
Folmar's Mill, Goshen, flour and grist mill.....			8
N. Skipper, Honoraville, flour and grist mill.....			10
Daniel & Co., Lapine, flour and grist mill.....			30
John S. Marsh, Rutledge, flour and grist mill.....			20
G. B. Sasser, Luverne, flour and grist mill.....			15

*CULLMAN COUNTY.

Joseph W. Hyatt, Baileyton, flour and grist mill.....	10
Miles Humphries, Baileyton, flour and grist mill.....	4
D. H. Laney, Battleground, flour and grist mill.....	6
Robert J. Waldrop, Cranehill, flour and grist mill.....	20
Andrew J. Miller, Summit, flour and grist mill.....	6

*DALE COUNTY.

Archer McCall, Candy, flour and grist mill.....	10
Floyd Mill, Dothan, flour and grist mill.....	10
Lewis Mill, Clopton, flour and grist mill.....	15
Murphy Mill, Dothan, flour and grist mill.....	5
Maunds Corn Mill, Ewells, flour and grist mill.....	10
Pope's Mill, Grimes, flour and grist mill.....	60
Charles Thrower, Kleg, flour and grist mill.....	16
Daniel McSwean, Ozark, flour and grist mill.....	20
Preston's Mill, Peach, flour and grist mill.....	20
The Kelley Grist Mill, Pinckard, flour and grist mill.....	150
Atkinson's Saw Mill, Newton, lumber and timber mill.....	16
J. F. Bell, Daleville, lumber and timber mill.....	22

*DALLAS COUNTY.

Calhoun's Mill, Carlowville, flour and grist mill.....	10
Ivey & Williams, Morrowville, flour and grist mill.....	8

DEKALB COUNTY.

L. D. Wooten, Blake, flour and grist mill.....	8
J. D. Hall, Chavies, flour and grist mill.....	10
J. S. Ward, Chumley, flour and grist mill.....	12
Kean & Warren, Cordell, flour and grist mill.....	20
Swindell's Mill, Cotnam, flour and grist mill.....	12
Griffin's Mill, Cotnam, flour and grist mill.....	12
Emeline Clayton, Crossville, flour and grist mill.....	6
Swader's Mill, Dekalb, flour and grist mill.....	15
James Clark, Eula, flour and grist mill.....	15
* David J. Harper, Floy, flour and grist mill.....	3
Elrod's Grist Mill, Flay, flour and grist mill.....	4
Davis Mill, Fort Payne, flour and grist mill.....	16
Thomas F. Everett, Luna, flour and grist mill.....	8
Elrod's Mill, Geraldine, flour and grist mill.....	30
Pruitt's Mill, Skirum, flour and grist mill.....	12
Lebanon Flour & Grist Mill, Lebanon, flour and grist mill....	36
Robert F. Ellison, Mentone, flour and grist mill.....	25
Ellie Ellsworth, Opair, flour and grist mill.....	6
Warren's Grist Mill, Portersville, flour and grist mill.....	12

*From U. S. Census, 1900.

NAME.	POSTOFFICE.	INDUSTRY.	H. P.
John F. Williams, Rains, flour and grist mill.....			8
Edward W. Williams, Rains, flour and grist mill.....			6
McGee's Mill, Sand Rock, flour and grist mill.....			5
Charles G. Matheny, Sauty Mills, flour and grist mill.....			20
Dixie Mills, Sulphur Springs, flour and grist mill.....			10
* Phillips' Mill, Valleyhead, flour and grist mill.....			4
The Roberts Mill Co., Collinsville, flour and grist mill.....			25
W. E. Brown & Son, Sulphur Springs, lumber and timber mill..			15
James M. Durham, Chavies, lumber and timber mill.....			16
William C. Hill & Co., Blanche, lumber and timber mill.....			40
D. D. Hughes, Hughes, lumber and timber mill.....			15
Ward, Pickens & Co., Dawson, lumber and timber mill.....			15
John A. Davis, (Wills Creek), Fort Payne, grist mill and gin			
M. S. Brown and W. C. Thomas, (Lookout Creek), Sulphur			
Springs, flouring mill.....			
† D. D. Hughes, (Wills Creek), Hughes P. O.; flour & grist mill			
P. M. Frazier, (Wills Creek), Lebanon, flour and grist mill..			
S. D. Warren, (Wills Creek), Lebanon, flour and grist mill....			
Grif. Elrod, (Town Creek), South Hill, flour and grist mill....			
Durham & Co., (Town Creek), Chavies, flour, grist & saw mill			

*ELMORE COUNTY.

E. & H. T. Andrews, Channahatchee, flour and grist mill.....	25
Benjamin Spigener, Elmore, flour and grist mill.....	5
Sykes Mill, Sykes Mill, flour and grist mill.....	16
John C. Birt (Lancaster Old Mill,) Tallassee, flour and grist	24
Freeman's Grist Mill, Tallassee, flour and grist mill.....	5
J. J. Benson, Kowaliga, lumber and timber mill.....	20
J. T. Rogers, Spigners, lumber and timber mill.....	36
(From Chapter III.)	
†Tallassee Falls Mfg. Co., (Tallapoosa River,) Tallassee, cotton	
and woolen goods	8,900
Montgomery Power Co. (Tallapoosa River), Tallassee, electric	
transmission to Montgomery, Ala.....	5,600

*ESCAMBIA COUNTY.

Bradley Mill, flour and grist mill	10
S. S. Overstreet, Roberts, flour and grist mill.....	20
James F. Douglas, Mason, lumber and timber	25

*From U. S. Census, 1900.

†This is the same company that is now organized under the name of the Mt. Vernon Woodbury Cotton Duck Company, with office at Montgomery, Ala.

ETOWAH COUNTY.

NAME.	POSTOFFICE.	INDUSTRY.	H. P.
Wesson Mills, Attalla, flour and grist mill.....			25
Cox & Brother, Avery, flour and grist mill.....			6
B. H. Rogers, Etowahaton, flour and grist mill.....			40
T. G. Ewing, Ewings, flour and grist mill.....			60
John C. Rollins, Fenton, flour and grist mill.....			8
Reese Mill, Hill, flour and grist mill.....			10
John H. Helms, Ballplay, flour and grist mill.....			6
Ford & Sibert's Mill, Hokes Bluff, flour and grist mill.....			30
* Morgan & Cochran, Keener, flour and grist mill.....			8
W. J. Harris, Nix, flour and grist mill.....			12
John B. Burns, Seaborn, flour and grist mill.....			8
A. B. Stephens, Seaborn, flour and grist mill.....			8
W. H. Cobb, Steels Depot, flour and grist mill.....			20
P. C. Turner, Walnut Grove, flour and grist mill.....			30
P. C. Turner, Walnut Grove, woolen goods.....			13
W. M. Brothers & Son, Gallant, woolen goods.....			8
Gadsden Times-News, Gadsden, printing and publishing.....			4
J. M. Morague, (Big Wills Creek), Gadsden, grist mill.....			100
Wm. McCleendon, (Big Wills Creek), Attalla, grist mill.....			40
† — Griffith, (Big Wills Creek), Keener, grist mill.....			35
Bob Rigers, (Big Canoe Creek), Gadsden, grist mill.....			75
Tom Ewing, (Cane Creek), Gadsden, grist mill.....			40

FAYETTE COUNTY.

Rodolphus Cotton, Bankston, flour and grist mill.....			20
D. G. Hester, Covin, flour and grist mill.....			12
* John W. Anthony, Glenallen, flour and grist mill.....			30
Landon Miles, Hester, flour and grist mill.....			13
Bishop Emick, Rena, lumber and timber mill.....			40
Phillip N. Fortenberry, Bankston, lumber and timber mill.....			8
W. L. Caine, (Sipsey River), Fayette, saw and grist mill.....			40
T. E. Newton & Bro., (Sispey River), Fayette, saw and grist			40
Licurgas Ray, (Luxapelila Creek), Montcalm, saw and grist..			30
John Barnes, (Luxapelila Creek), Covin, gin and grist mill..			30
E. Bishop, (Luxapelila Creek), Rainy, saw, gin and grist mill			30
John Williams, (Luxapelila Creek), Covin, gin and grist mill..			30
Washington Hubbert, (Shirley Creek), gin and grist mill....			10
Gilpin & Jones, (Shirley Creek), saw, gin and grist mill.....			16
Jones & Jones, (Shirley Creek), Hugent, saw, gin & grist mill			20
P. N. Fortenberry, (Davis Creek, Bankston, saw, gin and grist			8
G. H. White, (Davis Creek), Davis Creek, saw, gin and grist			16
† J. W. Blackburn, (Davis Creek), Davis Creek, saw, gin & grist			18
M. I. Barnette, (Davis Creek), Ridge, saw, gin and grist mill..			20
Dolphus Cotton, (Clear Creek), Bankston, saw, gin and grist			16
M. Miller, (Clear Creek), Bankston, saw, gin and grist mill..			
John G. Kizer, (North River), Berry Station, saw, gin & grist			40
Marshall Jones, (Bear Creek), Bear, saw, gin and grist mill			20
R. G. Walker, (Bear Creek), Bear, saw, gin and grist mill....			24
Landon Miles, (Stewart Creek), Hester, grist mill.....			12
J. T. McCaleb, (Mountain Creek), New River, grist mill.....			16
W. A. Ayers, (Beaver Creek), Fayette, gin and grist mill.....			12
G. W. Gray, (Boxes Creek), Stough, grist mill.....			16
Miles Whitson, (Clear Creek), Handy, grist mill.....			12
Bud Wade, (Hollingsworth Creek), New River, grist mill....			12

*From U. S. Census, 1900.

†From report of Probate Judge.

NAME.	POSTOFFICE.	INDUSTRY.	H. P.
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*FRANKLIN COUNTY.

Helm's Mill, Belgreen, flour and grist mill.....	6
M. J. Height, Baggett, flour and grist mill.....	10
James McNair, Kirby, flour and grist mill.....	20
Andrew Posey, Igoburg, flour and grist mill.....	24
Thomas Watson, Phil Campbell, flour and grist mill.....	20
S. T. Bonds, Pleasant Site, flour and grist mill.....	80
Jes. S. Scott, Russellville, flour and grist mill.....	10
Sparks Mill, Underwood, flour and grist mill.....	10
John T. McAlister, Phil Campbell, lumber and timber mill....	10

*GENEVA COUNTY.

Avant's Mill, Geneva, flour and grist mill.....	15
Lowry's Mill, Geneva, flour and grist mill.....	10
Bell's Mill, Fadette, flour and grist mill.....	15
W. J. Keith and R. Y. Daniels, Geneva, flour and grist mill..	15
Clark's Grist Mill, Highnote, flour and grist mill.....	4
Underwood's Grist Mill, Sanders, flour and grist mill.....	20
Condry's Grist Mill, Whitaker, flour and grist mill.....	15
John T. Coleman, Geneva, lumber and timber mill.....	30
Clark Bros. & Co., Wicksburg, lumber and timber mill.....	10
Wilson Deshoga, Dundee, lumber and timber.....	15
Nathan Hall, Dotham, lumber and timber.....	20

HALE COUNTY.

William Steward, Fivemile, flour and grist mill.....	8
William A. Avery, (Five-Mile Creek), Five-Mile, flour and grist	10
J. H. Payne & Co., Ingram, flour and grist mill.....	10
* M. M. Avery, Havanna, flour and grist mill.....	15
Pickens Mill, Greensboro, lumber and timber mill.....	15
Greensboro Carriage & Wagon Shops, Greensboro, carriages and wagons	6
Richardsons Mills, (Five-Mile Creek), Five-Mile, grist mill and gin	20
† J. H. Payne's Mill, (Five-Mile Creek), Havana, grist and gin.	20
Avery's Mill, (Five-Mile Creek), Havana, grist mill and gin..	25
J. A. Stephenson, (Prairie Creek), Newbern, grist mill & gin..	20
Irwin & Martin, (Big Creek), Greensboro, grist mill and gin..	25

*HENRY COUNTY.

Kennedy's Mill, Shorterville, flour and grist mill.....	8
Joshua A. Hart, Granger, flour and grist mill.....	15
Jeffcoat Mill, Gordon, flour and grist mill.....	8
Blacksheer & Saunders, Haleburg, flour and grist mill.....	25
Cumming's Mill, Bush, flour and grist mill.....	20
Joe Baker, Hadland, flour and grist mill	27
Badford Grist Mill, Little Rock, flour and grist mill.....	15
Blackshe & Sanders, Haleburg, flour and grist mill.....	15
John L. Smith, Ashford, flour and grist mill.....	13
Mark Shelley, Balkum, flour and grist mill.....	6
Singleterry's Water Mill, Kinsey, lumber and timber.....	27
J. P. Williams & Co., Columbia, lumber and timber.....	25

*From U. S. Census, 1900.

†From report of Probate Judge.

*JACKSON COUNTY.

NAME.	POSTOFFICE.	INDUSTRY.	H. P.
Moody's Flouring Mill, Kyles, flour and grist mill.....			40
George W. Brown, Kosh, flour and grist mill.....			8
J. F. Bell, Maxwell, flour and grist mill			4
Coffey's Mill, Scottsboro, flour and grist mill.....			8
Gross Mill, Parks Store, flour and grist mill.....			10
Hackworth's Mills, Bolivar, flour and grist mill.....			8
John S. Henegar, Rosalie, flour and grist mill.....			20
Bort Harrison, Section, flour and grist mill.....			6
W. A. Howell, Hollytree, flour and grist mill			5
Mathew's Grist Mill, Carns, flour and grist mill.....			10
Page's Mill, Woodville, flour and grist mill.....			6
Paint Rock Milling Co., Paint Rock, flour and grist mill.....			8
Reid & Prince, Estillfork, flour and grist mill.....			20
David H. Starkey, Kosh, flour and grist mill.....			8
Shork Mills, Hollywood, flour and grist mill.....			60
Cagle Mill, Oakley, flour and grist mill.....			12
John Thomas, Pisgah, flour and grist mill.....			20
Martin Walker, Trenton, flour and grist mill.....			40
James P. Williams, Trenton, flour and grist mill.....			20
John V. Wheeler, Pisgah, flour and grist mill.....			20
Charles W. Brown, Glenzaida, lumber and timber mill.....			25
J. N. Gonce, Anderson, lumber and timber mill.....			20
Melton Morris, Daugherty, lumber and timber mill.....			12
David M. Starkey, Kosh, lumber and timber mill.....			20
Tomon Shingle Mill, Culver, lumber and timber mill.....			10

*JEFFERSON C6OUNTY.

J. M. Landrum, Pinson, flour and grist mill	20
John Lowery Mill, Gary, flour and grist mill.....	12
Hendon's Corn Mill, Trussville, flour and grist mill.....	10
Posey's Mill, Morris, flour and grist mill.....	20
James W. Raney, Ezra, flour and grist mill.....	35
William B. Rogers, Toadvine, flour and grist mill.....	32
G. W. Underwood, Argo, flour and grist mill	15
William J. Wedgworth, Cardiff, flour and grist mill.....	10
W. W. Woodruff, Adamsville, flour and grist mill	8
W. M. Self, Oneonto, flour and grist mill.....	15
William M. Phillip, Greene, flour and grist mill.....	40
Hurst & Johnson, Pinson, lumber and timber mill.....	18
James W. Raney, Ezra, woolen goods	35

LAMAR COUNTY.

{ John H. Cantrell, Pharos, flour and grist mill.....	15
{ Claborn E. Carter, Detroit, flour and grist mill.....	12
{ Kirk's Mill, (Yellow Creek), Sizemore, flour and grist mill....	8
{ Mote's Mill, (Beaver Creek), Guin, flour and grist mill.....	6
{ John T. Moore, (Yellow Creek), Vernon, flour and grist mill..	35
* { H. W. Miller, (Luxapella Creek), Millport, flour and grist mill	20
{ Stanford Mills, Detroit, flour and grist mills.....	12
{ S. B. Thomas, Arcola, flour and grist mills.....	10
{ Lafayette J. Hayes, Molloy, lumber and timber mill.....	15
{ Hiram Hollis, Vernon, lumber and timber mill.....	35
{ Dr. Wm. H. Kennedy, Kennedy, lumber and timber mill.....	50
{ S. B. Thomas, Arcola, lumber and timber mill.....	15

*From U. S. Census, 1900.

	NAME.	POSTOFFICE.	INDUSTRY.	H. P.
	J. O. Kennedy, Kennedy, mill and gin			
	J. W. Thomas, Jr., (Hills Creek), Alfred, gin, saw and grist			
	W. M. Thomas, (Hills Creek), Alfred, gin, saw and grist mill			
	Osborn & Hill, (Yellow Creek), Blowhorn, gin, saw and grist			
†	D. M. Hollis, (Beaver Creek), Beaverton, gin, saw and grist			
	B. G. Boman, (Yellow Creek), Vernon, gin, saw and grist mill			
	A. A. Mathews, (Yellow Creek), Arcola, gin, saw and grist mill			
	W. L. Morton, (Yellow Creek), Vernon, gin, saw and grist mill			
	Penning Bros., Baxter, gin, saw and grist mill.....			

*LAUDERDALE COUNTY.

	William M. Thornton, Rogersville, flour an grist mill.....	20
	James A. Bevis, Threet, flour and grist mill.....	8
	Jessie J. Bevis, Kendell, flour and grist mill.....	6
	George M. Bretherick, Hines, flour and grist mill.....	24
	Isa B. Eastep, Eastep, flour and grist mill.....	8
	Ingram Brothers, Anderson, flour and grist mill.....	8
	Thomas D. Pruitt, Pruitton, flour and grist mill.....	24
	Sharpe's Mill, Florence, flour and grist mill.....	40
	Nancy Williams, Lexington, flour and grist mill.....	20
	H. N. Call, Reserve, flour and grist mill.....	18
	Chandler & Chittam, Oliver, flour and grist mill.....	20

LAWRENCE COUNTY.

	Burrell & Casteel, Progress, flour and grist mill.....	10
	George's Mill, Leighton, flour and grist mill.....	18
	Jones' Estate, Kinlock, flour and grist mill.....	10
	Kerby's Mill, Avoca, flour and grist mill.....	16
*	Thomas Oliver, Hatton, flour and grist mill.....	16
	John S. Stephenson & Co., Kinlock, flour and grist mill.....	27
	Wesley L. Stover, Crow, flour and grist mill.....	15
	Terry & Terry, Courtland, flour and grist mill.....	20
	Wallace Mill, Avoca, flour and grist mill.....	10
	W. M. Willingham, Camp Spring, lumber and timber mill....	1
	H. C. McClannahan, (Town Creek), Mount Hope, grist mill....	
	John S. Stephenson, (Sipsey River,) Moulton, flour and grist	
†	Ben F. Masterson, (Big Nance Creek), Moulton, grist mill....	
	W. G. Hamilton, (Big Nance Creek), Pitt, grist mill.....	
	J. M. Key, (Brushey Creek), Pool, grist mill.....	
	W. L. Stover, (Flint Creek), Oakville, flour and grist mill....	
	B. A. Casteel, (Flint Creek), Sewickley, flour and grist mill..	

LEE COUNTY.

	Shelton's Mill, Opelika, flour and grist mill.....	40
	Floyd Mill, Opelika, flour and grist mill.....	10
	George W. McKinnon, Yale, flour and grist mill.....	24
	Vaugh Mill, Loachapoka, flour and grist mill.....	20
*	N. G. Macon, (Reed Creek), Loachapoka, flour and grist mill..	30
	W. O. Moore, Auburn, flour and grist mill.....	40
	W. K. Meadows, (Halawochee Cr.), Hattie, flour and grist mill	36
	James Crosby, Osanippa, flour and grist mill	15
	Benjamin F. Stripling, Yale, lumber and timber.....	20
	W. W. Wright, (Chewacla Creek), Auburn, not in use now.....	
	W. W. Wright & Geo. P. Harrison, Opelika, (Saugahatchee Cr.)	
†	H. J. Spratling, (Frazier Creek), Opelika, grist mill.....	25
	B. F. Meadows, (Halawochee Creek), Opelika, grist mill.....	40

*From U. S. Census, 1900.

†From report of Probate Judge.

LIMESTONE COUNTY.

	NAME.	POSTOFFICE.	INDUSTRY.	H. P.
	Weatherford Bros., Elkmont, flour and grist mill.....			6
	Carter's Mill, Athens, flour and grist mill.....			16
	Dupree & Stepp, Mount Rozell, flour and grist mill.....			25
	Haye's Grist Mill, Mooresville, flour and grist mill.....			15
	T. M. Holmes, Elkmont, flour and grist mill.....			12
	John M. Head, Pettusville, flour and grist mill.....			8
	Nancy Haney, Legg, flour and grist mill.....			20
	Edward G. Hambleton, Goodsprings, flour and grist mill.....			15
	Thomas D. Hastings, Elkmont, flour and grist mill.....			5
	James L. Lamar, Goodsprings, flour and grist mill.....			8
*	Eugene Parham, (Piney Creek), Athens, flour and grist mill..			8
	M. A. Phillips, Shoalford, flour and grist mill.....			12
	Ripley's Mill, Ripley, flour and grist mill.....			15
	George Vassar, Lax, flour and grist mill.....			8
	Witty's Mill, (Birds Branch), Athens, flour and grist mill....			15
	William J. Woodfin, Pettusville, flour and grist mill.....			15
	Pioneer Mill, Mount Rozell, flour and grist mill.....			20
	A. P. Andrews, Elkmont, flour and grist mill.....			8
	William N. Webb, Elkriver Mills, flour and grist mill.....			12
	Baker's Mills, Elkriver Mills, flour and grist mill.....			8
	Allison Miller, Rowland, flour and grist mill.....			10
	Grisham Bros., Elkriver Mills, lumber and timber.....			40
	Grisham Bros., Elkriver Mills, carriages and wagons.....			40
	L. C. Hightower, (Big Creek), Elkriver Mills, saw, flour and grist mill			
	Wm. Bailey, (Big Creek), Quidnunc, flour and grist mill.....			
	J. W. Carter, (Big Creek), O'Neal, gin, flour and grist mill....			
	M. J. Witty, (Birds Branch), Athens, flour and grist mill.....			
	J. C. Vaughn, (Sulphur Creek), Elkmont, gin, flour & grist mill			
	R. B. Malone, (Sulphur Creek), Athens, gin, flour and grist mill			
†	Wm. Woodfin, (Ragsdale Creek), Elkmont, gin, flour and grist			
	J. W. Carter, (Panther Creek), Carter, gin, flour and grist mill			
	John Carroll, (Leslie Creek), Centerhill, gin, flour and grist mill			
	Wm. Davidson, (Limestone Creek), Lax, gin, flour and grist mill			
	R. M. Clem, (Piney Creek), Fairmount, gin, flour and grist mill			
	Eugene Parkam, (Piney Creek), Athens, gin, flour and grist mill			
	W. M. Hayes, (Limestone Cr.), Mooresville, gin, flour and grist			
	W. H. Roberts, (Sugar Creek), Athens, gin, flour and grist mill			
	W. H. Marbut, Goodsprings, gin, flour and grist mill.....			

LOWNDES COUNTY.

*G. B. Holley, Lowndesboro, flour and grist mill.....	10
†W. N. Bozeman, Benton, gin and mill.....	

*MADISON COUNTY.

Fannie J. Ridley, Haden, flour and grist mill.....	8
D. L. Middleton Water Mill, Gurley, flour and grist mill.....	20
Delop's Mill, Dan, flour and grist mill.....	8
Hardy Keel Water Mill, Gurley, flour and grist mill.....	15
Annie M. Taylor, Hazelgreen, flour and grist mill.....	8
Bellfactory Mill, Huntsville, flour and grist mill.....	25
Key's Mill, Keysmill, flour and grist mill.....	28
William S. Russell, Madison Station, flour and grist mill.....	12
Chas. F. Rountree, Maysville, flour and grist mill.....	15
William S. Garvin, Monrovia, flour and grist mill.....	15
A. D. and W. E. Rogers, Newmarket, flour and grist mill.....	60
Butler Mill Co., Poplaridge, flour and grist mill.....	30
Payne & Miller, Huntsville, flour and grist mill.....	30
Martin's Grist Mill, Huntsville, flour and grist mill.....	15
H. C. Turner, Dan, lumber and timber.....	16
Daily Mercury, Huntsville, printing and publishing.....	6

*From U. S. Census, 1900.

†From report of Probate Judge.

*MACON COUNTY.

NAME.	POSTOFFICE.	INDUSTRY.	H. P.
H. H. Robinson,	Loachapoka,	flour and grist mill.....	4
M. W. Glass,	Societyhill,	flour and grist mill.....	8
J. O. H. Perry,	Tuskegee,	flour and grist mill.....	20

MARION COUNTY.

* {	The Carter Mill, Ur,	nour and grist mill.....	5
	Bexar Mercantile Co., Bexar,	flour and grist mill.....	8
	Eads & Fowler, Glenallen,	flour and grist mill.....	12
	The Boatwright Mill, Inez,	flour and grist mill.....	12
	Samuel A. & Wm. V. Read,	Eldridge, flour and grist mill.....	20
	Jasper N. Green & Sons,	Brilliant, flour and grist mill.....	20
	Elishu Vickery, Winfield,	flour and grist mill.....	16
	The Shirley Mill, Ur,	flour and grist mill.....	10
	Jesse G. Poe, Bearcreek,	flour and grist mill.....	6
	Bull, Atkins & Donaldson,	Haleysville, flour and grist mill....	52
	Buttahatchee Mill Co.,	Haleysville, lumber and timber.....	52
	John Cumens, Haleysville,	lumber and timber	12
	Kelly Saw Mill, Haleysville,	lumber and timber.....	15
	John R. Phillips, Bearcreek,	lumber and timber.....	50
	Simon W. Moss, Winfield,	lumber and timber.....	36
	The Powell Mill & Wool Carder,	Duffey, woolen goods.....	50
	Albert J. Hamilton, (Williams Creek),	Hamilton, flour and grist	
	W. C. Gann, (Sipsey Creek),	Bexar, flour and grist mill.....	
	Q. Northington, (Sipsey Creek),	Hamilton, flour and grist mill	
	Crane & Riggs, (Sipsey Creek),	Delhi, flour and grist mill.....	
	T. L. Shotts, (Bull Mountain Creek),	Shottsville, flour and grist	
	I. J. Loyd, (Bull Mountain Creek),	Bull Mountain, flour and grist	
	D. F. Ballard, (Williams Creek),	Hamilton, flour and grist mill	
† {	James P. Pearce, (Buttahatchee River),	Pearce's Mill, flour and	
		grist mill	
	James P. Pearce, (New River),	Texas, flour and grist mill.....	
	J. C. Carter, (Woods Creek),	Elmira, flour and grist mill.....	
	James Young, (Cantrell Mill Creek),	Hamilton, flour and grist	
	W. J. Wright, (Barnesville Mill Creek),	Barnesville, flour and	
		grist mill	
	Henry Guin, Guin,	flour and grist mill.....	
	Tucker Moss, (Luxapelila Creek),	Winfield, flour and grist mill	
	D. G. Morrow, (Woods Creek),	Elmira, flour and grist mill.....	

*MARSHALL COUNTY.

J. M. Ellison,	Preston,	flour and grist mill.....	4
Mathis Mill,	Albertville,	flour and grist mill.....	10
James B. Powell,	Columbus City,	flour and grist mill.....	4
James F. Prentice,	Arab,	flour and grist mill.....	7
P. C. Ragsdale,	Uniongrove,	flour and grist mill.....	10
James P. Smith,	Warrenton,	flour and grist mill.....	10
Scott's Mill,	Friendship,	flour and grist mill.....	8
John D. Sumers,	Loaz,	flour and grist mill.....	15
Lahey Mill,	Bartlett,	flour and grist mill.....	10
George E. Whisnant & Son,	Oleander,	flour and grist mill.....	10
I. G. Gross,	Columbus City,	flour and grist mill.....	12
Walker & Fowler Mills,	Friendship,	flour and grist mill.....	20
William J. Copelan,	Diamond,	flour and grist mill.....	5
James Wm. Barclay,	Woodville,	flour and grist mill.....	10
The Winston Mill,	Meltonsville,	flour and grist mill.....	12
W. G. Smith Estate,	Sidney,	flour and grist mill.....	10
Jas. M. Selvage,	Grant,	flour and grist mill.....	4

*From U. S. Census, 1900.

†From report of Probate Judge.

MARENGO COUNTY

NAME.	POSTOFFICE.	INDUSTRY.	H. P.
*Rhodes Mill,	Sweetwater,	flour and grist mill.....	12

*MOBILE COUNTY.

N. Q. Thompson,	Citronelle,	flour and grist mill.....	10
H. Brannan & Son,	Pierce,	lumber and timber.....	30
T. A. Hatter & Son,	Creola,	lumber and timber.....	75
Littleton Lee,	Pierce,	lumber and timber.....	60

*MONROE COUNTY.

J. B. Solomon,	Manistree,	flour and grist mill.....	15
James H. Simpson,	Mexia,	flour and grist mill.....	10
Benjamin Johnson,	Hollinger,	flour and grist mill.....	15
Andrew Bohanon,	Franklin,	flour and grist mill.....	15
David J. Hatter & Son,	Wait,	lumber and timber.....	60
David J. Hatter & Son,	Wait,	lumber and timber.....	20
C. C. Yarbrough,	Monroeville,	lumber and timber	20

*MONTGOMERY COUNTY.

Daniel's Mill,	Sellers,	flour and grist mill.....	25
Montgomery Cotton Mill,	Montgomery,	cotton goods	35

MORGAN COUNTY.

*Sarah M. McCutcheon,	Briscoe,	flour and grist mill.....	10
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PERRY COUNTY.

*	Henry C. Nichols,	(Dobyness Creek),	Theo, flour and grist mill.	20
	Mary G. Wallace,	Marion,	flour and grist mill.....	4
	Hodger's Mill,	Newbern,	flour and grist mill.....	15
	W. F. Moore,	Marion,	flour and grist mill.....	4
	Downey's Saw Mill,	Greensboro,	lumber and timber	15
	Stevenson's Saw & Water Mills,	Newbern,	lumber and timber..	20
	Lucindy Washburn,	(Taylor Creek),	Jericho, lumber and timber	18
	W. T. Downey,	(Limestone Creek),	Folsom, grist mill.....	6
	James Wallace,	(Legroane Creek),	Jericho, grist mill.....	8
	Dr. J. B. Tucker,	(Taylors Creek),	Jericho, grist mill.....	6
†	Lucindy Washburn,	(Taylors Creek),	Jericho, grist mill.....	8
	S. M. Bolling,	(Branch of Oakmulgee Cr.),	Pinetucky, grist mill	8
	C. C. Cosby,	(Oakmulgee Creek),	Perryville, grist mill.....	8
	Thomas J. Fountain,	(Little Creek),	Oakmulgee, gin, saw and grist mill	8
	Pann Patterson,	(Little Creek),	Oakmulgee, gin, saw and grist	8
	Sarah Fountain,	(Little Creek),	Oakmulgee, gin, saw and grist	8
	Thaddeus Smith,	(Little Creek),	Active, grist mill.....	8
	W. M. Elland,	(Fords Mill Creek),	Marion, grist mill.....	20
	J. F. Morton,	(Potato Patch Creek),	Levert, grist mill.....	6
	Elijah Smith,	(Beaver Creek),	Bliss, grist mill.....	6
	Noah Coker,	(Beaver Dam Creek),	Bethlehem, grist mill.....	6
	W. A. Fountain,	(Oakmulgee Creek),	Oakmulgee, rice mill....	10

*PICKENS COUNTY.

Richardson & Prichards,	Coalfire,	flour and grist mill.....	25
James Mullenix,	Gordo,	flour and grist mill.....	6
H. B. & A. W. Latham,	Carrollton,	flour and grist mill.....	12
Slaughter's Mill,	Raleigh,	flour and grist mill.....	16
W. A. Kerr,	Reform,	lumber and timber	10

*From U. S. Census, 1900.

†From report of Probate Judge.

*PIKE COUNTY.

NAME.	POSTOFFICE.	INDUSTRY.	H. P.
M. J. Youngblood,	Youngblood,	flour and grist mill.....	110
William F. Ingram,	Josie,	flour and grist mill.....	20
Nancy Cotton,	(Cotton's Mill),	Milo, flour and grist mill.....	12
Ely Dees & J. D. Murphee,	Pronto,	flour and grist mill.....	20
George W. King,	Gosnen,	flour and grist mill.....	30
The Lewis Mill,	Rodney,	flour and grist mill.....	24
McQuaggis Mill,	Ansley,	flour and grist mill.....	15
George F. Williams,	Tatum,	flour and grist mill.....	4
Slatting's Grist Mill,	Henderson,	flour and grist mill.....	25
P. A. Motia,	Wingard,	flour and grist mill.....	8
Bowden & Daughtry,	Tennille,	flour and grist mill.....	16
William E. Brown,	Josie,	flour and grist mill.....	10
G. B. Howard,	Goshen,	flour and grist mill.....	20

*RANDOLPH COUNTY.

W. W. Dobson,	Wedowee,	flour and grist mill.....	20
J. H. White & Z. N. Lipham,	Clack,	flour and grist mill.....	11
Mrs. Georgia Gibbs,	Wedowee,	flour and grist mill.....	10
Gilis Mill,	Ofelia,	flour and grist mill.....	10
Eppie M. White,	Bernice,	flour and grist mill.....	5
Larkin & M. B. Taylor,	Lamar,	flour and grist mill.....	8
Joseph B. Taylor,	Roanoke,	flour and grist mill.....	24
Owins Mill,	Potash,	flour and grist mill.....	15
Rogers Mill,	Ofelia,	flour and grist mill.....	8
C. A. Prescott,	Wedowee,	flour and grist mill.....	20
H. A. Merrill,	Lamar,	flour and grist mill.....	6
Elizabeth H. Merrill,	Micaville,	flour and grist mill.....	12
J. E. McCosh & Co.,	Lime,	flour and grist mill.....	40
William S. McCarley,	Graham,	flour and grist mill.....	20
John H. Landers,	Lofty,	flour and grist mill.....	8
Edward Lavoorn,	—, —, —,	flour and grist mill.....	8
Thomas J. Lavoorn,	Hawk,	flour and grist mill.....	16
Thomas J. Lavoorn, Sr.,	Newell,	flour and grist mill.....	8
James L. & John T. Kaylor,	Kaylor,	flour and grist mill.....	60
Henry C. Jordon,	Clack,	flour and grist mill.....	6
J. B. Hammond,	Sewell,	flour and grist mill.....	8
T. M. Halaway,	Tolbut,	flour and grist mill.....	15
Robert H. Harris,	Louina,	flour and grist mill.....	15
Dock Huckaby,	Almond,	flour and grist mill.....	10
Holley's Mill,	Rock Mills,	flour and grist mill.....	30
E. C. Heaton,	Hawk,	flour and grist mill.....	10
William N. Gladney,	Roanoke,	flour and grist mill.....	12
A. B. East,	Christiana,	flour and grist mill.....	2
Adamson & Edward's Mills,	Ofelia,	flour and grist mill.....	25
Bailey Mill,	Haywood,	flour and grist mill.....	12
F. P. Parker,	Foresters Chapel,	flour and grist mill.....	10
John C. Murphy,	Gay,	flour and grist mill.....	2
E. L. Pool,	Happyland,	flour and grist mill.....	20
James M. Kitchens,	Rockdale,	flour and grist mill.....	8
James H. Wright,	Jeptha,	flour and grist mill.....	12
Adamson & Edwards,	Ofelia,	lumber and timber.....	40
William W. Brooks,	Lofty,	lumber and timber.....	15
William A. Camp,	Almond,	lumber and timber.....	10
James L. & John T. Kaylor,	Kaylor,	lumber and timber.....	20
H. H. Stephens,	Pencil,	lumber and timber.....	20
Samuel H. Striplin,	Roanoke,	leather, tanned, curried & finished	6
Wehadkee Cotton Mills,	Rock Mills,	cotton goods.....	108

*From U. S. Census, 1900.

RUSSELL COUNTY.

	NAME.	POSTOFFICE.	INDUSTRY.	H. P.
*	{ Davis' Mill, Crawford, flour and grist mill.....			20
	{ H. R. Dudley, Seale, lumber and timber.....			40
	{ †E. M. Anderson, (Watermelon Cr.), Seale, grist mill and gin			20

*SHELBY COUNTY.

W. C. Denson, Pelham, flour and grist mill.....	12
William H. Shrader, Shelby, flour and grist mill.....	20
William H. Pledger, Pelham, flour and grist mill.....	40
Hendrick & Alverson, Vincent, flour and grist mill.....	40
David A. Whitfield, Vandiver, flour and grist mill.....	10
Brownings Mill, Columbiana, lumber and timber.....	30

*ST. CLAIR COUNTY.

The Yarbrough Mill, Ashville, flour and grist mill.....	8
Hare's Mill, Ashville, flour and grist mill.....	8
John R. Dyke, Wolfcreek, flour and grist mill.....	30
Perry E. Wyatt, Coal City, flour and grist mill.....	10
Henry A. Palmer, Partlow, flour and grist mill.....	10
J. M. McLaughlin, Springville, flour and grist mill.....	25
The Machen Mill, Partlow, flour and grist mill.....	10
The Lindsey Mill, Ashville, flour and grist mill.....	10
Hill & Foreman, Springville, flour and grist mill.....	28
Henderson's Mill, Ragland, flour and grist mill.....	5
Helm & Truss, Helms, flour and grist mill.....	20
Grout's Mills, Wolfcreek, flour and grist mill.....	10
The Gilchrist Mill, Ashville, flour and grist mill.....	5
The Cox Mill, Ashville, flour and grist mill.....	10
Rufus W. Beason, Whitney, flour and grist mill.....	11
Rock Bridge Mill, Gallant, lumber and timber mill.....	20

*SUMTER COUNTY.

E. B. Hearn, (Kinterbish Creek), Gaston, ...	40
R. H. Stephens, (Kinterbish Creek), Alamuchee.....	20
R. D. Simmons, (Toomsooba Creek), Bell's Station.....	30
R. W. Shaw, Cuba	10
W. H. Walker, (Silver Creek), Alamuchee.....	20
J. U. Gillespie, (Coatopa Creek), Coatopa	10

TALLADEGA COUNTY.

*	{ Jefferson Roberson, Fayetteville, flour and grist mill.....			10
	{ J. C. Brock, Eastaboga, flour and grist mill.....			12
	{ Riser & Bro., Talladega, flour and grist mill.....			40
	{ Shock E. Jemison, Sunnyside, flour and grist mill.....			15
	{ Vincent Mill, Talladega, flour and grist mill.....			25
	{ O. F. Luttrell, Talladega, flour and grist mill.....			40
	{ Riddle Mills, Waldo, flour and grist mill.....			16
	{ J. F. Smith, Eastaboga, flour and grist mill.....			40
	{ John W. Thweatt, McFall, flour and grist mill.....			12
	{ J. B. Turner, McFall, flour and grist mill.....			15
	{ Allison's Mill, Talladega, flour and grist mill.....			60
	{ J. F. Smith, Eastaboga, lumber and timber.....			40
	{ Cragdale Mill, Talladega, lumber and timber.....			40
	{ J. B. Turner, McFall, lumber and timber.....			20

*From U. S. Census, 1900.

†From report of Probate Judge.

NAME.	POSTOFFICE.	INDUSTRY.	H. P.
Priebes Mill, (Choccolocco Creek), Jenifer, grist mill.....			200
J. F. Smith's Mill, (Choccolocco Creek), Oxford, grist mill.....			225
B. Schmidt's Mill, (Choccolocco Creek), Lincoln, grist mill....			200
Craig's Mill, (Choccolocco Creek), Oxford, grist mill.....			150
Wilson's Mill, (Choccolocco Creek), Jenifer, grist mill.....			150
Eureka Mills, (Choccolocco Creek), Eureka, grist mill.....			150
Turner's Mill, (Chehawhaw Creek), McFall, grist mill.....			150
Kants Mill, (Talladega Creek), Chandler Springs, grist mill..			50
Riddle's Mill, (Talladega Creek), Waldo, grist mill.....			75
Taylor's Mill, (Talladega Creek), Talladega, grist mill.....			150
Reynold's Mill, (Talladega Creek), Nottingham, grist mill....			150
Allison's Mill, (Talladega Creek), Talladega, grist mill.....			75
Duncan's Mill, (Talladega Creek), Alpine, grist mill.....			75
Baker's Mill, (Talladega Creek), Kymulga, grist mill.....			100
Vincent's Mill, (Crooked Creek), Sylacauga, grist mill.....			50
Oden's Mill, (Short Creek), Sylacauga, grist mill.....			75
Jemison's Mill, (Kelley's Creek), Sunnyside, grist mill.....			50
Camp & Sons' Mill, (Salt Creek), Hopeful, grist mill.....			50
Robinson's Mill, (Cedar Creek), Fayetteville, grist mill.....			50
Lackey's Mill, (Horse Creek), Ironaton, grist mill			25
Talladega Company, (Choccolocco Creek), Talladega, organized for electric transmission			

*TALLAPOOSA COUNTY.

George Stewart, Thaddeus, flour and grist mill.....	12
John W. Britt, Jacksons Gap, flour and grist mill.....	20
Benjamin F. Jarvis, Yates, flour and grist mill.....	12
T. J. Hamlet, Hamlet, flour and grist mill.....	15
T. W. Whitman, Dadeville, flour and grist mill.....	20
Sanford Milling & Mfg. Co., Dadeville, flour and grist mill....	25
John W. Hay, Camphill, flour and grist mill.....	15
Hammond's Mill, Dadeville, flour and grist mill.....	20
Hodnett Grist & Flour Mill, Acme, flour and grist mill.....	16
Thomas L. Bulger, Dadeville, flour and grist mill.....	15
Vines Mills, Easton, flour and grist mill.....	40
A. T. & H. C. Vickers, Newsite, flour and grist mill.....	20
J. C. Street, Anniston, flour and grist mill.....	25
Shepard Bros. & Co., Tohopeka, flour and grist mill.....	10
G. W. Stewart, Thaddeus, flour and grist mill.....	25
Albert J. Holloway, Alexander City, flour and grist mill.....	20
Mrs. Milliner, Mary, flour and grist mill.....	25
Jno. L. Patterson, Hackneyville, flour and grist mill.....	12
Thomas B. Griffin, Matilda, flour and grist mill.....	10
Daviston Mill, Daviston, flour and grist mill.....	8
Lamberth & Dewberry, Logpit, flour and grist mill.....	20
Silver Shoals Mill, Buttston, flour and grist mill.....	80
M. R. Hays & Bro., Notasulga, flour and grist mill.....	40
Farrows Flour & Grist Mill, Susanna, flour and grist mill.....	60
J. H. Yarbrough, Hackneyville, flour and grist mill.....	12
T. F. Garnett, Tallassee, lumber and timber.....	20
G. W. Stewart, Thaddeus, lumber and timber.....	20

*From U. S. Census, 1900.

†From report of Probate Judge.

*TUSCALOOSA COUNTY.

NAME.	POSTOFFICE.	INDUSTRY.	H. P.
Price's Mill,	Binion,	flour and grist mill.....	8
Keene's Mill,	Cottondale,	flour and grist mill.....	20
B. E. Thompson,	Cottondale,	flour and grist mill.....	15
Wm. D. Shadix, (Sandy Creek),	Double Springs,	flour and grist	4
J. W. Spencer,	Elrod,	flour and grist mill.....	10
Webb's Mill,	Elrod,	flour and grist mill.....	20
Hagler's Mill,	Falls,	flour and grist mill.....	40
Patton's Mill,	Fosters,	flour and grist mill.....	12
David M. Montgomery,	Moore's Bridge,	flour and grist mill....	10
Looney John Mills,	New Lexington,	flour and grist mill.....	6
Eitson's Mill,	New Lexington,	flour and grist mill.....	12
Alfred Gilliland,	Newtonville,	flour and grist mill.....	12
Andrew J. Hewett,	Skelton,	flour and grist mill.....	5
Tierce's Mill,	Tierce,	flour and grist mill.....	10
James M. Yerby,	Tuscaloosa,	flour and grist mill.....	20
O. W. Glenn,	Tyner,	flour and grist mill.....	8
The Rope & Yarn Mills, (Binion's Creek),	Samantha,	cordage and twine	60

*WALKER COUNTY.

Boldo Grist Mill,	Boldo,	flour and grist mill.....	40
James B. Wakefield,	Prospect,	flour and grist mill.....	10
Lewis W. Odom,	Oakman,	flour and grist mill.....	10
Mahala E. & Dalton Odom,	Parrish,	flour and grist mill.....	10
Joseph Z. Norris,	Galloway,	flour and grist mill.....	5
Thomas J. King,	Oakman,	flour and grist mill.....	10
Lewis Guthrie,	Pocahontas,	flour and grist mill.....	10
Wm. Cobb,	Oakman,	flour and grist mill.....	10
Peter McGough,	Carbonhill,	lumber and timber.....	10

*WASHINGTON COUNTY.

Mrs. Samuel Wilkins,	Healing Springs,	flour and grist mill.....	6
Consey's Mill,	Healing Springs,	lumber and timber mill.....	10

WILCOX COUNTY.

*	{	Ward & Grimes, (Pine Barren Creek),	Pineapple, flour and grist	33
		George A. Barge, Snowhill,	flour and grist mill.....	15
†	{	J. W. Cooper,	Candler, flour and grist mill.....	16
		George Barge, (Pine Barren Creek),	Furman, grist mill and gin	
		Glover & Carter, (Pine Barren Cr.),	Pineapple, grist mill and gin	
		S. McCormick, (Pine Barren Cr.),	Pineapple, grist mill and gin	
		D. McIntosh, (Pursley Creek),	Camden, grist mill and gin....	

*From U. S. Census, 1900.

†From report of Probate Judge.

WINSTON COUNTY.

NAME	POSTOFFICE.	INDUSTRY.	H. P.
Richard H. Blake, Houston, flour and grist mill.....			8
Thomas O. Partridge, Elk, flour and grist mill.....			10
Wm. D. Shadix, (Sandy Creek), Double Springs), flour and grist			4
George D. Wilson, Haleysville, flour and grist mill.....			8
* Manna A. Posey, Motes, flour and grist mill.....			10
Martin A. & Martha Peak, Peaks Mill, flour and grist mill.....			10
Milligan Mill, Double Springs, flour and grist mill.....			10
James Cantrell, Addison, flour and grist mill.....			4
Burks Mill, Cranal, flour and grist mill.....			10
Nauvoo Mill, (Black Water Creek), Nauvoo, grist mill and gin			
Anderson Ward Mill, (Clear Creek), Haleysville, flour and grist			
J. Calvin Cagle, (Clear Creek), Double Springs, saw, flour and			
grist mill and gin			
Jonathan Barton Mill, (Clear Creek), Deer, grist mill			
Hadder Mill, (Clear Creek), Double Springs, grist mill.....			
Posey Mill, (Clear Creek), Motes, grist mill, saw and gin.....			
S. D. Spain, (Clear Creek), Malta, grist mill, saw and gin.....			
† Gus Posey Mill, (Clear Creek), Elk, grist mill, saw and gin....			
Wm. Dodd, (Splunge Creek), Natural Bridge, grist mill, saw			
and gin			
Kelley Mill, (Black Water Creek), Lynn, grist mill, saw and gin			
Peaks Mill, (Grindstone Creek), Peaks Mill, grist mill, saw and			
gin			
Jack Curtis, (Sandy Creek), Double Springs, grist mill, saw and			
gin			
Manley Payne, (Beech Creek), Gumpond, grist mill, saw and gin			
Christian Mill, (Christian Creek), Peaks Mill, grist mill, saw			

*From U. S. Census, 1900.

†From report of Probate Judge.

INDEX.

Alabama River at Selma:	
General Description of Station	85
Daily Gage Heights Table for 1899.....	85
Daily Gage Heights Table for 1900.....	86
Daily Gage Heights Table for 1901.....	87
Discharge Measurements 1900	86
Discharge Measurements 1901	87
Estimated Monthly Discharge, 1900-1901.....	90
Minimum Monthly Discharge and Horse Power, 1899-1901..	91
Rating Table, 1900-1901.....	88-89
Big Sandy Creek, Tallapoosa County:	
Daily Gage Heights, 1900-1901.....	39-40
Discharge Measurements, 1900.....	39
Elevations and Bench Marks along	45
Minimum Monthly Discharge and Horse Power, 1900-1901..	43
Profile	44
Rating Table, 1900-1901.....	41
Big Uchee Creek, Estimate of Horse Power.....	11
Big Wills Creek, Wesson's Mill, Discharge Measurements.....	91
Black Warrior River:	
Cordova Station, General Description	120
Daily Gage Heights, 1900-1901	120-121
Discharge Measurements, 1901.....	121
Estimated Monthly Discharge Mulberry Fork, 1900-1901 ..	123
Minimum Monthly Discharge and H. P., 1900-1901.....	124
Rating Tables, 1900-1901.....	122
Tuscaloosa Station, General Description	104
Daily Gage Heights, 1889-1901.....	106-113
Discharge Measurements, 1895-1901.....	105, 110, 111, 113
Discharge (Graphic), 1889-1899.....	118-119
Estimated Monthly Discharge, 1895-1900.....	116, 117, 118
Minimum Monthly Discharge and H. P., 1899-1901.....	119
Rating Table, 1895-1901	114, 115
Gages	127
Locks	125, 126, 127
Powers	126
Survey of	124
Tributaries	128
Clear Creek	128
Little Warrior or Locust Fork	128
Cahaba River, Survey of	101
Water Powers on	102
Centerville Station, General Description	99
Daily Gage Heights, 1901.....	99
Discharge Measurements, 1901	99
Minimum Monthly Discharge and H. P., 1901.....	101
Rating Table, 1901	100
Choccolocco Creek, at Eureka, Discharge Measurements.....	91
Near Juniper	91

INDEX.

Coosa River:

Riverside, Ala., Station, General Description.....	53
Daily Gage Heights, 1896-1901.....	54, 56, 58, 60, 62, 63
Discharge Measurements, 1896-1901.....	54, 55, 57, 60, 62, 63
Estimated Monthly Discharge, 1896-1901.....	65, 66
Graphic Illustration of Discharge, 1897-1899.....	67, 68
Minimum Monthly Discharge and H. P., 1899-1901....	68
Rating Curve	56
Rating Table, 1896-1901.....	55, 57, 59, 61, 64
Rome, Ga., Station, General Description	69
Daily Gage Heights 1897-1901.....	70, 71, 73, 76, 77
Discharge Measurements, 1896-1901.....	69, 70, 72, 75, 76
Estimated Monthly Discharge 1897-1901.....	78, 79
Graphic Illustration of Discharge, 1897-1899.....	80, 81
Minimum Monthly Discharge and H. P., 1899-1901....	81
Rating Table, 1897-1901.....	72, 74, 75, 77
Survey of. above Wetumpka	93
Table of Discharge and Net H. P. at Lock Sites on.....	95
Tributaries of above Wetumpka	92
Water Powers on Tributaries	92-93
Cowikee Creek, Estimate of Horse Power.....	11
Discharge Measurements—Miscellaneous:	
Big Wills Creek, Wesson's Mill	91
Choccolocco Creek at Eureka and near Juniper.....	91
Hatchet Creek at Goodwater	91
Talladega Creek at Kymulga	91
Tallassee-hatchee Creek at Childersburg.....	91
Estimates of Horse Powers—Miscellaneous:	
Big Uchee Creek	11
Cowikee Creek	11
Hatchechubbee Creek	11
Ihagee Creek	11
Omussee Creek	11
Yattayabba Creek	11
Estimated Monthly Discharge, Explanations of	13
Gage Heights. Explanation of	11
Hatchechubbee Creek, Estimate of H. P.....	11
Hatchet Creek at Goodwater, Discharge Measurement.....	91
Hillabee Creek:	
Description of Station	46
Daily Gage Heights, 1900-1901.....	47
Discharge Measurements, 1900	46
Estimated Monthly Discharge, 1900-1901.....	49
Rating Table, 1900-1901.....	48
Ihagee Creek, Estimate of H. P.....	11
Omussee Creek, Estimate of H. P.....	11
Rating Tables, Explanations	12
Stations and Observers, List of	10
Stations and Water Powers, General Statements.....	9
Talladega Creek at Kymulga, Discharge Measurement.....	91
Talladega Creek at Nottingham	82
Daily Gage Heights, 1900-1901.....	82, 83
Discharge Measurements, 1900-1901.....	82
Estimated Monthly Discharge, 1900-1901.....	84
Minimum Monthly Discharge and H. P., 1900-1901.....	84
Rating Table, 1900-1901	83

INDEX.

Tallapoosa River at Milstead	15
Daily Gage Heights	16, 17, 19, 21, 22
Depth of Run-Off	27
Discharge Measurements	15, 17, 18, 20, 21
Minimum Monthly Discharge	27
Rating Table	16, 18, 20, 23
Tallapoosa River at Susanna	28
Daily Gage Heights, 1900-1901	28, 29
Discharge Measurements, 1900-1901	28
Estimated Monthly Discharge, 1900-1901	30
Rating Table, 1900-1901	29
Tallapoosa River at Sturdevant	30
Daily Gage Heights, 1900-1901	31, 32
Discharge Measurements, 1900-1901-1902	31
Tallapoosa River, Elevations and Bench Marks along between Millstead and Griffin Stations	34
Tallapoosa River, Map of Milstead to Griffin Shoals, Fig. 4....	37
Tallapoosa River, Profile of Griffin Shoals to Milstead	38
Survey of in Alabama	32
Tributaries, with Discharges and H. P.	51, 52
Tallassee-hatchee Creek at Childersburg, Discharge Measurement	91
Tennessee River at Chattanooga	139
General Description	139
Daily Gage Heights, 1890-1900	140, 141, 146, 150
Daily Gage Heights, 1901	153
Discharge Measurements	141
Discharge Measurements, 1897-1899	145, 147
Discharge Measurements, 1900-1901	149, 153
Estimated Monthly Discharge, 1890-1901	156, 159
Estimated Monthly Discharge (Graphic), 1891-1898	160
Minimum Monthly Discharge, 1899-1901	161
Rating Table, 1890-1900	144, 148, 151, 152
Tennessee River, Shoals near Florence	161
Estimated Minimum H. P.	163
Minimum Discharge, 1890-1901	163
Tributaries	164
Tombigbee River at Columbus, Miss	129
General Description of Station	129
Daily Gage Heights, 1900-1901	129, 130
Discharge, 1901	130
Monthly Discharge, 1900-1901	132
Minimum Monthly Discharge, 1900-1901	133
Rating Table, 1900-1901	131
Tombigbee River near Epes	133
General Description	133
Daily Gage Heights, 1900-1901	134, 135
Discharge	134
Monthly Discharge, 1901	137
Minimum Monthly Discharge, 1900-1901	138
Rating Table, 1900-1901	136, 137
Tributaries	138
Luxapallla Creek	138
Measurements, 1901	138
Utilized Water Powers, List of	165
Yattayabba Creek, Estimated H. P. of	11

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